

for 3 skate

50 fms. 1 1/2 man net 23 .13 1/2, 311

3 coils boy line	75	13 1/2	10.13
6 doz. 32lb. codlines	192	20	38.40
6 " 14" "	84	20	16.80
5 gross Hal. Hooks.	80	80	4.00
4 balls becher	20	30	6.00
6 " linen twine 40/4		115	6.90
4 gundy rubbers		1.00	4.00
6 Trawl anchors		1.00	4.00
2 " rollers		1.50	3.00
3 14" Knives		2.00	6.00
1 " Hal. Acader		4.25	1.00
2 gal Sloth. Jar.		50	1.00
1/2 doz. 8" mill bastards		125	.63
#18 2 heavy Ball Trawl Officer	25		.50
1/2 Red sole boots (high)			10.00
21 10# Soft Soap.	10 @ 10		1.00
3 Skate Lops		25	75
3 " bottoms		35	1.05
1 gal ver. Jamir			2.50

Halibut food.

- (5) July 14. (2) halibut 15 lbs (stomach contents saved.)
- (5) " " " " 85 lbs. one silver smelt in stomach
- (8) July 24 (5) " 60 " 1 skate, 1 hake, 1 sole, 1 herring
- " " " " 15 " 1 lemon sole
- (10) Aug 15 (12) one very large one, disgorged partially digested salmon.
- (11) Aug 16 9 sea anemones.
- (1) April 29 72 lb. ♀ 52" one heliaster disgorged on deck.
- (12) Aug 16 flounder in stomach do for another one.
- (2) May 28 1 hgt remains of small decapod crustacean
- (2) 4 other cartilaginous remains of small fish. saved.
- (3) May 28 1 hgt. ♂ 16 lbs. 31" x 10" young octopus in stomach
- (4) May 29 1 hgt. ♀ 42 lb. 45 x 14 1/2", few vertebral ribs + otolith saved.
- (8) July 24 1 hake in stomach
- (6) July 20 = skate or shark. digested
- (7) July 21 skate in stomach
- (9) Aug 15 ling cod, salmon, red cod.
- (13) Aug 17 2 ft fish back bone skate, ling cod.

bably
Pro Osmerus attenuatus
L. 125

Prob. Synodus luciocephalus, 83 mm.
Mercurius productus
Hd. 100 + Bdy. 375 + 54 mm. Caudal.

Glyptocephalus zachirus. L. 210

(over)

Saline: north of the north-west of the Logger. XII. 15. June
21-27 fms. f.g.s., f.d.s. (O. 83)

The Stomach of the only fish examined contained
one Solea (sp?) of $2\frac{1}{2}$ in., one Solea (sp?), one
Eupagurus Bernhardus, and two Portunus (sp?)
Todd, R.C.

J

July 20	65 lb, 4 1/8 - 16	♀	heavily ripe eggs saved —
July 21	almost ripe?	85 lb, 4 1/6 " 18" ♀	
July 21	55 lb, 4 1/8 " 15"	♀	riper than usual
Aug 17	75 lb, 4, 6 x 19	♀	eggs loose
" "	80 " 4, 8 x 19	♀	partially ripe
Aug 17	30 lb, 3, 4 x 13	♂	large testes very large
" 16	55 lb, 4, 2 x 15 in	♀	eggs very free

July, 21.
 July, 21.
 July, 28.
 Aug., 16.
 Aug., 17.
 Aug., 17.

5518 fnggy S.
5731 fnggy S.
blackish

① ② ③
④ ⑤ ⑥
⑦ ⑧ ⑨
⑩ ⑪ c.g. S.

5403
L.S. (P)

+92
5490 L.S.

5487 c.g. S.
5486

fnggy S.
③ ④

5706
S. fne G. + brk. S.

④ ⑥
c.g. S.

L.S. frags
cot
⑫
L.S. frags
blk. S.
⑭
⑦ heds.
co frags

⑬
med gn. S.

5568
5569
fng L.S.

5447 L.S.
48 L.S.
89 L.S. frag

5378 L.S.
77 L.S.
5619 blk. S.
81 L.S. (G)

5589
90
L.S. (P)
5594 fne G.

5663
fne gn. S.

DEPARTMENT OF COMMERCE

H. 5734

~~The north and some
course
gravel~~

H. 5732 several

rocks size of wish
and 1 inch thick

sand quartz

might be glauconite
which might be flint
when it comes out.
look up

off sand fully half glauconite?

Shale? organ remain

siliceous shale -

made up of organisms

[Faint handwritten marks, possibly "X" and "G"]

537

21 = 5.95

5367 (vs 5386)

Ed. 6-10-13-500,000
No. 204

also different from 5377

also branching stony spicules
different kind of material, is fine
sand but small stuff seems
to be of different composition

5370 Limestone

No. 204
Ed. 6-10-13-500,000

DEPARTMENT OF COMMERCE

5371 see 5380
above the last.

DEPARTMENT OF COMMERCE

5376 diatomaceous shale

5377 (5403)
many organic remains
probably ~~terrestrial~~ diatoms, several
species, not but organic remains
diatomaceous shale

round, rectangular, coarse + fine
meshed diatoms

5377 limestone

DEPARTMENT OF COMMERCE

5380 North Mineral St

DEPARTMENT OF COMMERCE

5381 limestone (as 5383)

also banded rock
(5403)

DEPARTMENT OF COMMERCE

5383 Limestone

DEPARTMENT OF COMMERCE

5384 (as 5387)

5386 (different from 5377)

pronged spicules + plain
numerous foraminifera, dead
and broken tests.

don't see any magnesia ~~or~~
has feldspar + quartz.

DEPARTMENT OF COMMERCE

5387 diatomaceous shale
slightly more sandy than 5376
quite a bit of mineral
material

5390 (5395-) (5393)
near 76 in diam.
more earthy than above

5393 (5395)

near 76 in character.

DEPARTMENT OF COMMERCE

5395 near 5376 in
hand.

DEPARTMENT OF COMMERCE

5403 (5437) rec 5381)

DEPARTMENT OF COMMERCE

5426 (5564) (5561)

X Galathea here

Seems to be

volcanic, no volcanic glass
in it, sponge spicules, a
radiolarian.

(great many sponge spicules +
diatoms, more sand than mud.)

DEPARTMENT OF COMMERCE

5437

~~same thing undecomposed~~

doubtless miocene
layers of shale + limestone
or else concretion
very little terrigenous
material

5403
(same thing holds)
good.

calcareous ultimately
~~diatomaceous~~ consequently
occurs in little lumps unaffected by acid (HCl)

54172 quartz chert.

not minerals found in
Columbia River.

5521 at narrow place
more like southern stuff

5544 more like Columbia
River stuff same mineral
notation about the same.

5555- Limestone

DEPARTMENT OF COMMERCE

5561 soft blue mud

same general constituents of

5564 but in a way naturally

separated

larger grains very similar

to 5426

DEPARTMENT OF COMMERCE

5564

Blk. S. in Columbia River

fragments of lava

coarse sand than

5426

very closely related

minerals as in Cascade Lava

mg. minerals

Alaska

Aug. 24 Seattle 80,000 @ $3\frac{3}{4}$

(Date of Alfie Edwards trip,
on Weeding Bros.)

America

Aug. 14, 13,000, 3 skate sea. frozen herring, (first set)

" 15 14,000

" 16 15,000

Aug. 21, Seattle, 50,000 @ $3\frac{1}{4}$ ¢ (32,000 good fish)

Daisy

July 11 Newport, 19,000 @ $3\frac{1}{4}^f$, (3 days) || shacked (big), lingcod & salmon = 3,000 lbs. fish. 11,000? ^{Best day}

July 10, 5 skate to dory (3 dories) over night set, gurry bait,

July 13 caught 27,000 in 5 days, left for Seattle.

July 14 = 3,000 lbs. Best day 7,000 lbs

July 16 Seattle 30,000 " $5\frac{1}{2}^f$ (5 days)

July 24, S.W. of whistling buoy where we were on July 21

July 30, in with 17,000, 5 days, did lot of prospecting.

fished outside of 30 fm. ridge, 1,500 on 4 skates in one dory
others did not do so well.

July 30 Newport 17,000 " $5\frac{1}{2}^f$ (5 days) Aug 7, 11 miles S.W. Yaquina ht.

Aug 12 Seattle 40,000 " $4\frac{3}{4}^f$ (3 days) Aug 12, trip, fished 3 day = 40,000.

Aug 25 " 35,000 4^f (27,000 good fish.)

Made one set, on way down for July 30 trip, under Cape Soubert,
Took 4,000, good bottom, but fish all too small, chickens.

Decorah

May ¹⁰ 18	Portland	4,500	
		8,000	@ 3¢
May 28	"	^{13,700} 16,000	" 4¢
June 18	"	^{22,800} 25,000	" 3¢
July 8	"	^{32,500} 32,000	" 3 1/4 ¢

July 22	"	21,000	
		25,000	" 4¢

Aug ¹⁶ 11	"	14,000	o.k. 3 1/4 ¢ (5 days)
----------------------	---	--------	-----------------------

Aug 22	Seattle	40,000	3 ¢ (4 days) (28,000 good fish.)
--------	---------	--------	----------------------------------

Portland catches returned by Decorah.
vide Robert A. Reid, Sec'y. Portland Press Club.

May 10, 4,500	July 16, 32,500
28, 13,700	22 21,000

June 16, 22,800	Aug 10, 14,000
-----------------	----------------

July 13, used frozen herring 6 skates to dory
long net = 6,000 lbs. { crs. gy. S. 35 fms.
W 3/4 N, 6 miles Yagouina Lt. }

July 14, 1,500 to dory 6 skates ea, long net
(1/2 of 1,000 lbs, snagged in one day.)

Aug. 6, 5 day fishing came into Newport with 16,000,
fished off light near Daisy, began Aug 2.

Aug. 15, Decorah took 10,000 (Carrol)

Aug. 16 " " 11,000 (Lt. N.E., 9-10 miles)

Aug. 26, another trip off Newport.

Trawl Line.

DEPARTMENT OF COMMERCE

2,400 ft = 1 skate,

8 lines = 1 "

1 line = 50 fms.

9/24,000 (265

18

6-9

400 fms = 1 skate

= 2,400 ft.

hook. 6 feet apart.

400 hooks to skate of gear.

Twelve dory boat will
cover at one set about
18 sq. miles of ground.

7 skates stretch 3.18 mi.
6 " " 2.72 mi.

Trawl line

7-8 lines, 25 hooks 9 ft. apart.

Coll. Ref. #1⁸ Trawls are employed almost exclusively. The quantity used to a boat varies considerably. On the upper portion of S.E. Alaska a dory will have out from 5-7 skates. A skate comprises 7 lines of 50 fms each, and each of these lines will have about 25 hooks on gangions, or side lines, ~~which are set 6 feet apart~~ ~~and each of these lines~~. The # 6283 "English" fullhook is generally used by the white fishermen. Ordinarily there is an anchor and a buoy at each end of a skate, but for deep-water fishing an extra anchor and buoy are placed about the middle of the skate.

In fishing the trawls are set twice a day. The first set is made at about daybreak and the fisherman commences to lift about an hour after the line has all been paid out. The next set is usually made about 12 or 1 o'clock in the afternoon and the line is allowed to remain down about an hour. In the winter season usually but one set a day is made, while only $\frac{2}{3}$ of the usual gear is employed. The trawls are generally set in about 100 fms, (over).

although sometimes as deep as 300 fms. Fishing is continued during all stages of the tide, although some of the fishermen consider the morning flood as the best.

Large halibut are occasionally taken, one being delivered at Nome in 1904 which weighed 365 lbs. According to the superintendent at the See Harbor halibut station of the International Fisheries Co., the females appear to have well-developed eggs at all seasons of the year. This summer one of the authors opened a halibut measuring about $3\frac{1}{2}$ feet in length and found in its stomach 22 good sized herring.

It is quite evident that the fishery in southeast Alaska at least has reached its maximum development, if it has not already begun to decline. The banks are not very extensive in this section and most of them are frequented by the fish only about six months of the year (Oct-Mar). At times the fishery is prosecuted so vigorously on certain banks that they are swept clean of halibut early in the season, and the fish are followed up so closely in their migration from bank to bank that they have no rest until upon the approach of warm weather, when they scatter and seek the deeper waters.

Zillah May

in April of Aceta (^{at time of} with the corals) took 27,000)?

E.P. Rank { Two trips financed by W.C. Hammond and Sumner Co
First trip Sort gear on first haul returned empty
to S.F. and refitted

Second trip Total catch less than 6,000 lbs,

On smash up on beach an oil tank burst +
flooded hold. All fish spoiled thereby and ^{were} have overboard

Stoke Zillah May six miles of Yag. St. Aug 5. ^{Monday following} was towed into Frisco.

Halibut food

Alexander, A. B. Bull. Bu. Fish. XVII 1897 p141.

Cunningham, J. B. Market Marine Fish. p. 242-244

Todd, R. A. N. Sea. Fish. Invest. Comm. Rept. no. 2 South Area. 1902-1903 Lond. 1905.

Cobb, J. N. Rept. of Comm. Fish of Alaska. p 228-240 et seq.

Bait.

A.B. Alexande. Bull Bin Irish XVII 1897 p. 141.

Reproduction

see note under travel line. Coll Ref. #1.

Food other fishes.

May 6 stomach contents of one *P. cultratus* + two rock cod were ^{saved}.

May 7 2 skate stomachs saved.

May 8 45 in dogfish stomach contained 1 fresh herring)
May 28 stomach contents of two black cod saved.

July 25 { 1 dog with 2 fresh + 2 partially digested herring in stomach
1 dog " 1 herring in stomach

Aug 15 1 red fish disgorged shrimp or prawns floated away in ^{water}

5632 + July 30 nearly ripe eggs?

Musky Fish

Sept. 24 ; Tyee ; Portlock Bank ; 50,000 ; 5 1/2 ; 20,000 ^{Thrown out (mushy)}

Oct. 14 ; Star ^{on second last trip.} ; " " 240,000 ; 70,000

" San José / Carrol ; Cape St. James ; 18,000 ; 8 3/4 ;

" Decorah / Purney ; " " " 28,000 ; "

" ; Tyee ^{from the North.} ; 80,000 ;

Mushy fish

America (Booth) $3\frac{1}{4}$; 50,000 = 32,000 good fish. Aug 21-14.
Decorah " 3; 40,000 = 28,000 " " " 22-14.

Daisy (San Juan) 4; 35,000 = 27,000 ^(trip previous to last all sound fish.) " " " 25-14.

Athena would go down anyway; 60,000 good fish out of 100,000
would be better than Decatur Shantz.

(over)

Musky fish harden up in two weeks? Can't be determined
before icing noticeable
after 3-4 days in ice

"Seed" does it, expectation that in 2-3 weeks fish harden up.

Possibly is female that is musky. Needs investigation would take many fish to determine. Tried 4 fish 2♂ + 2♀, One of each (quite) and 1 of each partially musky.

Either spent fish after spawning or else, degeneration
preparatory to spawning, or accumulation of
fat prior to spawning as in salmon see: U.B.F. Doc. 799
Sept. 30-14

most likely the latter. Fish have hard fatty lumps from size of small finger nail to dollar; flesh becomes of consistency of condensed milk. — Not so prevalent in northern fish!?

closed reason for musky fish? Major Alexander, diseased condition (also Dr. Moore, parasites?) warm water condition.

DEPARTMENT OF COMMERCE

Sydney Inlet. { Fish every full }

(West Coast of Vancouver Id.

70 miles from Cape Slaterry

21 miles off the Coast of Vancouver Id.

many fish caught here the last two months

According to Shiscoll are the same run of fish as caught at Newport.

(Fishermen can usually tell by the "look" of a lot of fish the locality at which they were taken.)

✓ About the same percent of mushy fish. This is the first time mushy fish have been taken at Sydney Inlet.

p. 473

There is said, however, to be one defect
in the halibut when on the coast for
purposes of drying & smoking, and that
is that they have numerous white
"gelatinous" streaks through the
flesh.

Rept for '83

21889-91

Voeth, fish sold.

July 14	257 lbs.	\$13.15
20	401 "	21.20
23	937 "	32.05
24	478 "	23.90
25	173 "	
26	519 "	25.80
	{ 122 "	
	{ 114 "	
Aug 4	120 "	

Small

Scales

Large

2	—	0
5	—	7
6+	—	8+
11	—	15
13	—	20
13+	—	30
26	—	30
27	—	50
45	—	55
49	—	65—
58	—	

0-5

5-10-12

13 — 60

0-1

2

5

This coll

Result of catches
Tape worms.

Quinn's + Daisy's set under
Capelookout

Shind trip

XXXI
fne gy. S.
slime as
off Coos Bay

(Newport ~~Seal~~
 $\frac{1}{2}$ bad N.G. good?

XXXII
brk bot
good.

NG.
brk. bot good
XXXIII
hrd gn Mud
blk. S.

crs. S. G.
good
XXXIV

fne. gy. S.
N.G.
XXXV

no fish only dogs prior to May 8 Ours

Chi. Mar 31 - Apr. 3

May 11 Quinn

but one patch had touched set no I Apr. 29.

none on sets ^{N.G. bot} II, ^{part. N.G.} III, ^{good} IV, ^{part. N.G.} V, ^{N.G.} VI.

Second trip May 27.

S. N. G.

VIII

N. G.

IX

part. N. G.

X

good

XI

but no fish may have already moved in on bank, questionable

Newport work

good

fine S.

N. G.

good

① Trial rule out

XII

brk good

XIX

②

XIII

good

XXIII

③ a

XIV

③ b

XV

brk good

XXIV

XVI

fine S. N. G.

XXV

XVIII

brk. good

XXVI

→ XX - XXIII;

Newport, Oregon, small boats.

Sea Dog — Pilgrim — Orabell — U&I

✓ July 13,

3 halibut, 2 redfish

7 halibut (40-50 lbs), 3 redfish, 3 ling cod.

✓ July 20

—

1 halibut

—

—

✓ July 21

—

—

2 halibut

—

✓ July 28

29 halibut

—

—

—

✓ Aug 4

8 "

—

—

—

✓ Aug 14

—

—

1500
~~1500~~ lb halibut.

—

✓ Aug 15

1900 lbs. halibut

—

—

—

✓ Aug 16

1900 lbs. halibut

—

—

—

4800 Newport.
about 5,000 lbs.

Halibut Cruise of 1911.

Bottom	Fish taken on	no. of hauls successful	No. of unsuc- cessful hauls	Total hauls	Counting Total hauls	Percent Unsuccess- ful hauls.	Fish per haul of Successful
					Fish per haul		
Rocky	165	38	10	48	3.43 (4.34)	x 21 %	3.43
Gravel + Sand	64	13	2	15	4.26	x 13 "	4.92
Sand	39	5	6	11	3.83	x 54 "	7.80
Mud	23	4	5	9	2.55	x 55 "	5.75
Gravel + shells	10	3	1	4	2.50	x 25 "	3.33
Rocks + mud	9	2	1	3	3.00	x 33 "	4.50
Shells	9	2	2	4	2.25	x 50 "	4.50
Shells, gravel + mud	7	1	0	1	7.00	x 0 "	7.00
Sand + mud	3	1	5	6	.50	x 83 "	3.00
	329	69	32	101	3.25	x 32 "	4.77

S.F. Light ship must have quite a series of Observation hydrographic.

Bait fresh octopus; fresh halibut; fresh cod; fresh Salmon.

Fishermen

Edward Driscoll

R.F.D., Box 58 Centralia, Washington.

Friis

2716 Western Ave., Seattle.

Richard

Gladney

1625 Boylston Ave., "

Michael

Burke

Wiltshire Hotel "

Richard

Keough

No. of set.	No. of fish ^①	No. of fish ^②	Average ^①	Average ^②	Total ^①	Total ^②
27	2	5 ^{##}	16.0	26.4	32	132-114-120 ^⑨
8	3 ^{(##2)(138)(0010)(690)}	5 [°]	23.0	48.0	69	265 [°] -216-173 ^⑥
33	3 ^{(□□12)(828)}	9 [✓]	55.0	39.4	165	355-305 ^⑬
29	3 ⁽⁰¹¹²⁾⁽²⁴⁷⁾	18 ^{xx}	36.3	18.2	109	327 ^{xx} -281 ^⑩
5	4 ^{#15(1635)}	18 [*]	14.2	22.0	67	397 [*] -342-336 ^⑧
3	4 ^{(xx5)(335)}	27 [□]	22.0	20.7	88	559 [□] -481 ^⑫
9	5 ^{(x4)(352)}	29 ^{°°}	21.6	23.7	108	687 ^{°°} -591-478 ^⑤
32	7 ^{(□5)(540)}	29	37.0	32.0	259	934 [△] -804 ^⑭
1	9 ^{(△4)(1036)}	36	30.8	20.0	296	720 ^{△△} -620-401 ^③
4	8 ^{(△△4½)(706)}	36	19.6	22.7	157	817 ^{□□} -693-519 ^⑦
34	9 ^(✓)	38 ^x	32.1	21.4	289	813 [✓] -699 ^⑪
28	13 ^{(x3)(1115)}	45 [#]	28.8	41.5	375	1867 [#] -1606-937 ^④

Whales.

Apr. 12 Under way at 6.00 a.m.

Apr. 13, 1 whale.

Mod. sea.

3-4 ^{sticker} common porpoises (*L. obliquidens*)

Apr. 14 mod. sea. 12-4 fresh S.E. gale. dr 4-6. at 12.26 hove to

Apr. 15. R. sea. 8 a.m. - noon. heavy squall with hail passed over in mid water.

Aug. 29 ^{above.} saw 6-10 whales. some at least 30 ft from tip to tip of tail

Sept. 1 see whales each day.

Sept. 5 Saw 2-3 whales all day.

1911

Oct. 1911

Oct. Pac fish page 17.

report sent out Oct 4 range

station has already handled

197 whales this season.

Mar. 14 - 1912

Mar. killed first whale
of season, Calif. humpback
Gray's Amber

Pacific Fish for ~~Am~~ 1912 p. 24

Sept^{nr.}
1912

Sept 1912

Grays Harbor Whaling

Patterson 54

Westport 52

Abideen 36

man 70

2

largest of year 78 feet long.

works bet 1st latten &

sootroot.

Pae Trail

Grays Lumber Feathers Luth

368 white 1912

Nov. 1912

~~Weidling has still in Com.~~

1912 Cal aty when

Grays Harbor 217.

~~Jan 1913~~

Scallops Trials

July 20 (3b) 9.55, 20 min Tow 1 jelly fish, large with brown streamers
" 10.35 30 " few worm tubes encrusted with eggs
" on hand line while drifting through 10.35 haul
picked up 1, 6 in. scallop on hand line.

July 24 (5) 11.00 15 min Tow = 1 scallop. 1 6 inch.
11.30 " " " = blank.
12.00-12.30 = "

Aug 6 (10) 10.45, 45 min Tow 1 star fish + worm tubes in net.
12.30, 1 hr. = blank.

Aug 14 (11) 1.40, 20 min = 2 scallops "3 in" and "7 in" in dia. + worm tubes with grass
~~Scallop Towl 11.45 - 1.45 blank.~~ only over to anchor.

Department of Commerce and Labor

Introduction

Natural History of giant scallop

Geographical range

Botanical " "

Description

Size growth and death, habits

Parasites

The fishery

Origin development + present condition

Apparatus + methods of capture

Vessels or boats employed

Fishing grounds

Fishing season

Results of fishery 1887, 1888, 1889

The Uses of the Giant scallop

Food value

Uses of scallop for bait

Utilization of shells

2 Preparation of products, markets etc.
Sawdust, coal etc, shipman etc.
Markets.
Prices.

Weather

July 14 held up one hr. by rough bar & fog.
15 uncertain + fog.

20 Hazy weather inclined to be foggy some of the sea moderate swell.
21 Windy clear, increasingly hazy + cloudy toward evening
25 Very foggy + misty all morning, left at 12.40 p.m.
caught out over night heavy fog.

Aug 4 Very windy + choppy.

Aug 7 Very foggy one of most foggy yet.
14 Bearly overcast.

Aug 29, Very foggy could hardly see 3 miles in the.

Midnight Sunrise from Sunset

DEPARTMENT OF COMMERCE

Date	Direction	Force	Weather	Barom.	Therm.	Wind
July 13	N N	1	Cloudy	30.00	47	St
	S W	2	"	30.10	50	Mod
	S W	2	"	30.05	64	"
14	N W	1	Hazy	30.10	55	St
	N W	1	"	30.10	48	Mod
	N. W	1	Foggy	30.15	54	"
	"	2	Clear	30.10	64	"
	Calm	—	Sun-fog	30.15	60	"
15	N N	1	" "	do	52	"
	"	4	Hazy	30.20	68	"
	"	8	"	30.15	67	"
	"	8	"	30.05	53	Rough
16	"	4	"	30.05	52	"
	"	4	"	30.15	66	"
	"	7	"	30.05	57	"
	"	8	"	30.00	51	"
17	"	3	"	30.10	50	Mod
	"	2	Foggy	do	54	"
	"	4	Hazy	30.00	56	"
	"	7	"	do	50	"

DEPARTMENT OF COMMERCE

Date	Wind Direction	Force	Weather	Barom.	Therm.	Surf
July 18	NN	3	Hazy	30.05	50	Mod.
	"	2	Foggy	do	54	"
	"	8	Hazy	do	56	"
	"	6	"	29.95	52	"
19	"	4	"	do	do	"
	"	2	"	30.00	56	"
	"	7	Foggy	do	do	"
	"	4	"	do	48	"
20	"	2	Hazy	30.05	do	"
	"	1	Cloudy	30.10	56	"
	"	6	Hazy	30.15	62	"
	"	2	"	30.10	54	"
21	"	2	"	30.15	48	"
	"	1	"	do	64	"
	"	6	"	30.10	do	"
	"	7	"	do	54	"
22	"	2	"	30.15	49	"
	"	1	"	30.10	60	"
	"	8	Clear	do	55	"
	"	7	"	do	49	"

DEPARTMENT OF COMMERCE

Date	Direction	Force	Weather	Barom	Ther.	Surf
July 23	NW	2	Clear	30.15	47	Mod.
	"	2	"	do	52	"
	"	6	"	30.10	53	"
	"	4	"	30.05	48	"
24	"	4	Hazy	30.10	48	"
	"	2	"	do	59	"
	"	4	"	30.05	60	"
	Calm	—	"	30.00	46	"
25	"	—	Foggy	do	do	"
	NW	2	"	do	50	"
	SW	2	Rain & fog	do	64	"
	Calm	—	dense fog	29.90	50	"
26	Calm	—	do	29.95	47	Light
	NW	1	do	30.00	46	"
	do	2	Fog intermittent	do	66	"
	"	2	Clear	do	56	"
27	Calm	—	do	30.05	53	"
	"	—	Foggy	30.10	50	"
	NW	4	Clear	do	60	"
	"	5	"	do	52	"
28	"	2	"	do	do	"
	"	1	"	do	58	"
	"	7	"	30.05	"	"
	"	6	Hazy	30.00	54	Mod.

DEPARTMENT OF COMMERCE

Date	Direction	Force	Weather	Barom.	Therm.	Surf
July 29	NW	2	Hazy	30.00	47	Mod
	Calm	—	Dense fog	do	57	"
	NW	6	" "	29.90	54	Light
	"	5	" "	do	50	"
30	"	1	Foggy	do	49	"
	"	2	"	29.95	46	"
	"	4	"	30.00	59	"
	"	2	Hazy	30.05	54	"
31	Calm	—	"	do	49	"
	NW	2	"	30.10	68	"
	"	6	"	do	60	"
	"	2	"	do	50	"
Aug 1	"	2	Foggy	30.20	"	"
	Calm	—	"	do	49	"
	NW	6	Hazy	30.05	55	"
	"	6	Foggy	do	50	"
2	"	2	Dense fog	do	46	"
	"	1	do	do	49	"
	"	6	Foggy	30.00	64	"
	"	7	"	29.95	50	Mod.

DEPARTMENT OF COMMERCE

Date	Dir	Force	Weather	Barom.	Therm.	Surf
Aug 3	NW	6	Foggy	29.95	49	Mod
	"	4	"	30.05	56	"
	"	6	Hazy	do	"	Light
	"	4	"	30.10	51	"
4	"	4	Cloudy	30.15	49	"
	"	2	"	30.20	47	"
	"	6	Hazy	30.00	55	"
	"	6	"	do	49	"
5	"	2	"	do	46	"
	Calm	—	Some fog	do	50	"
	NW	4	Hazy	do	57	"
	"	2	"	30.05	55	"
6	A	2	"	do	51	"
	"	1	Foggy	do	56	"
	SW	3	Cloudy	30.10	61	"
	NW	2	Hazy	do	58	Rough
7	"	2	Foggy	do	47	"
	E	2	Hazy	30.15	58	"
	NW	6	Cloudy	30.10	56	"
	"	2	Hazy	30.05	54	"

DEPARTMENT OF COMMERCE

Date	Dir	Force	Weather	Barom.	Ther	Surf
Aug 8	NW	1	Hazy	30.10	46	Rough
	"	1	"	30.05	51	"
	"	4	"	do	60	"
	"	6	"	30.00	54	"
9	"	5	"	30.10	50	"
	"	2	Some Fog	30.05	"	"
	"	7	do	30.00	52	"
	"	7	Foggy	29.90	50	"
10	"	6	Some fog	do	45	"
	"	2	do	30.00	"	Mod.

DEPARTMENT OF COMMERCE

	Dir	Force	Weather	Surf
Aug 10	NW	6	Brk fog	Rough
	"	7	"	"
11	"	4	"	High
	"	1	"	"
	"	8	Foggy	"
	"	7	Brk fog	"
12	Calm	7	"	Rough
	NW	1	"	"
	"	6	Hazy	"
	"	3	Brk fog	"
13	"	3	"	"
	NW	4	"	"
	"	5	"	Mod
	"	3	Foggy	Sight
14	"	2	"	"
	Calm	—	"	"
	NW	2	Clky	"
	"	1	"	"
15	"	1	"	"
	"	1	"	"
	"	2	"	"
	Calm	—	"	"

DEPARTMENT OF COMMERCE

Aug 16	Calm	—	Cloudy	Slight
	"	—	"	"
	W	2	Clear	"
	Calm	—	Hazy	"
17	"	—	Cloudy	"
	"	—	"	mod.
	NW	St	"	Ser
	"	5	Hazy	Slight

Comparison of otter trawl and lines.

Early part of 1906 = Cobb. Fish. of Alaska, report of Comm.

Driscoll = 100,000 lbs. on lines; 12,000 lbs. in otter trawl.

Cobb Ref. ② But little halibut fishing is carried on in Alaska during the summer months, as halibut is then coming into Puget Sound ports in abundance from the fleet operating off Cape Flattery, Washington, and the fish moreover are in the deeper waters where they are more difficult to catch. The price is low also at this time. A few local vessels make short trips and fetch their catch, but the low prices received for fish prepared in this way during the past two years offers little inducement to the enterprise.

Cobb Ref. ③ The Atlantic fishermen made good catches in the spring & summer and the eastern market thus became glutted, so that prices dropped until many of the Pac. fishermen either ceased fishing for the time being or restricted the amount taken.

The experiment of using steam trawlers in Atlantic waters the last year or two created considerable interest among the Pacific

halibut fishermen, and in the early part of 1906 two steam
haukers ^{were} fitted out by a British Columbia co. to work on the
banks along that coast. The attempt was abandoned after
several months, however, having proved unprofitable. Ac-
cording to the reports of the masters of these vessels, the halibut
was too cunning a fish for them, and would avoid the haul
without apparent effort. This was especially noticeable
when the haul was operated in the vicinity of the dory fishermen.
While the latter would be making good catches, the hauls would
make hauls containing but few halibut and a quantity of small
fish of other kinds, for which there is no market on the Pacific
coast. Both of the steam haulers are now being fitted out for
dory fishing.

July her Steam hunter
at Vancouver "Orontes" arrives

July 1912.

~~Oct. 1912.~~

Nov. 1912 page 40

Nov. 1912.

British Columbia reach count.

Triumph 121 Ts. 124 feet.

Canada 166 Ts 100 feet.

each has 9 Grindorf fishermen under two years
contract

Ilec. hr. page 20
descript of shooting other hand

Ilec. 1912.

Steam
Sawler ^{ex} Kalihitung Jan. 1912
Det Jan. 1912. w-Pac
hist.

Sept. 1913.

Feb. 1913

Tranberr Geo E T'west

Andrew Kelly arrived in

Vic. Jan. 13.

1913 page 26 Pac. Fish.
April 1913

Vancouver, B.C. March 27.

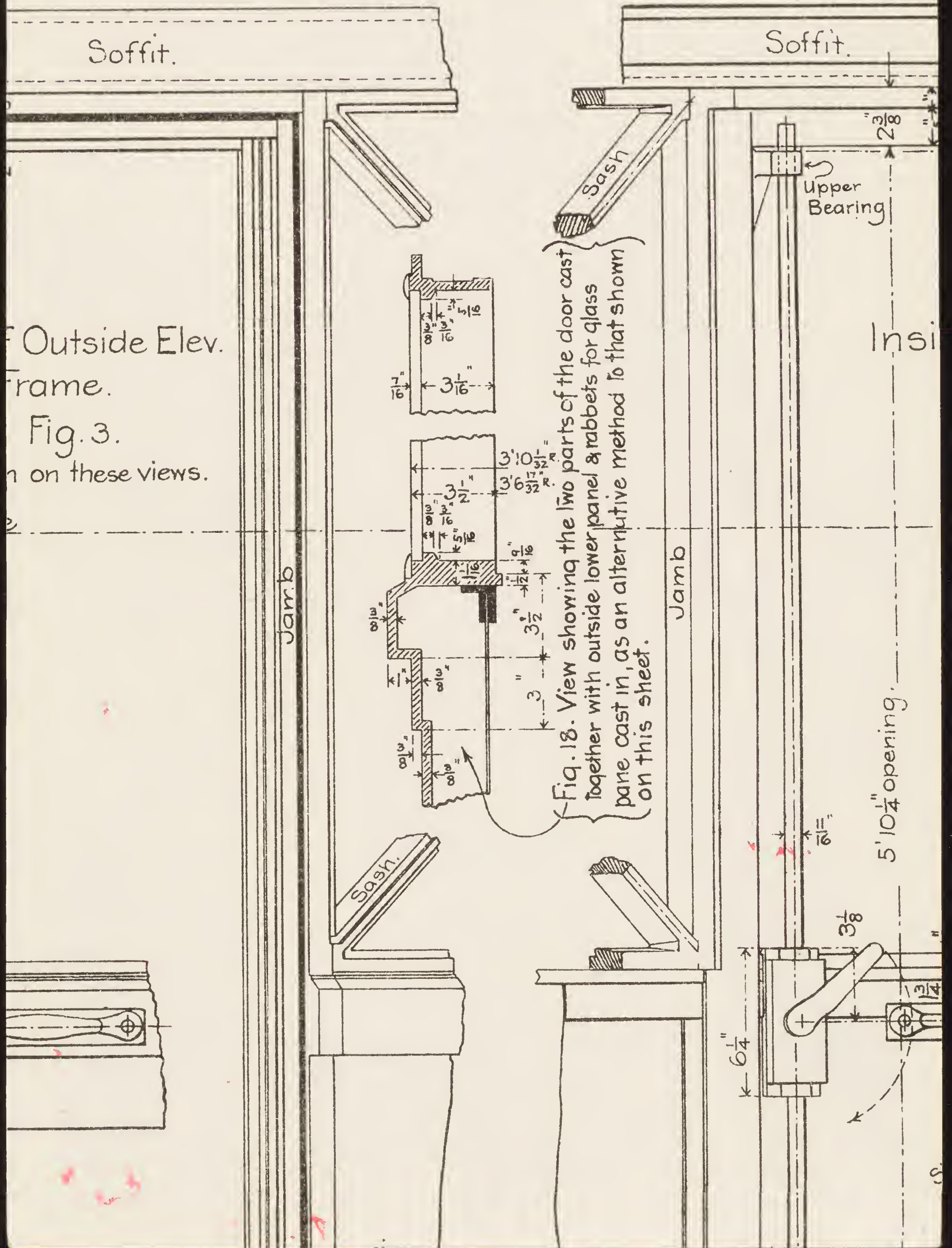
According to all accounts the B.C.
Fisheries Co. Ltd. will abandon the
use of trawls on its Grimsby
steamers Triumph & Canada. The
latter vessel arrived at Victoria
from the Beaufort Strait a day or
so ago and is being fitted up
with dories like the other Canada &

Apr. 1913 Pac. Fish.

American vessels. It is understood that the other boats which are being brought out to the Pac. Coast to engage in the halibut trade will be similarly equipped with dories & lines. To replace the hunting nets ~~with~~ which owing to the rocky & jagged seabed of the coast ~~water~~ have been found unsuccessful. The company has been put to considerable expense in consequence of the damage to the nets and it is stated that dummies will also be fitted out with dories.

Expected that Andrew Kelly
George Garsen & James Carruthers
will have dories in summer

n for Apparatus of the 4th, 5th



June 14. In Capt W. Quinn
July 1913.
note on Newport fish

Capt Wm Quinn was
sent, brought Canada and
from England, but reduced
in pay when converted to
long fishing July 1913.

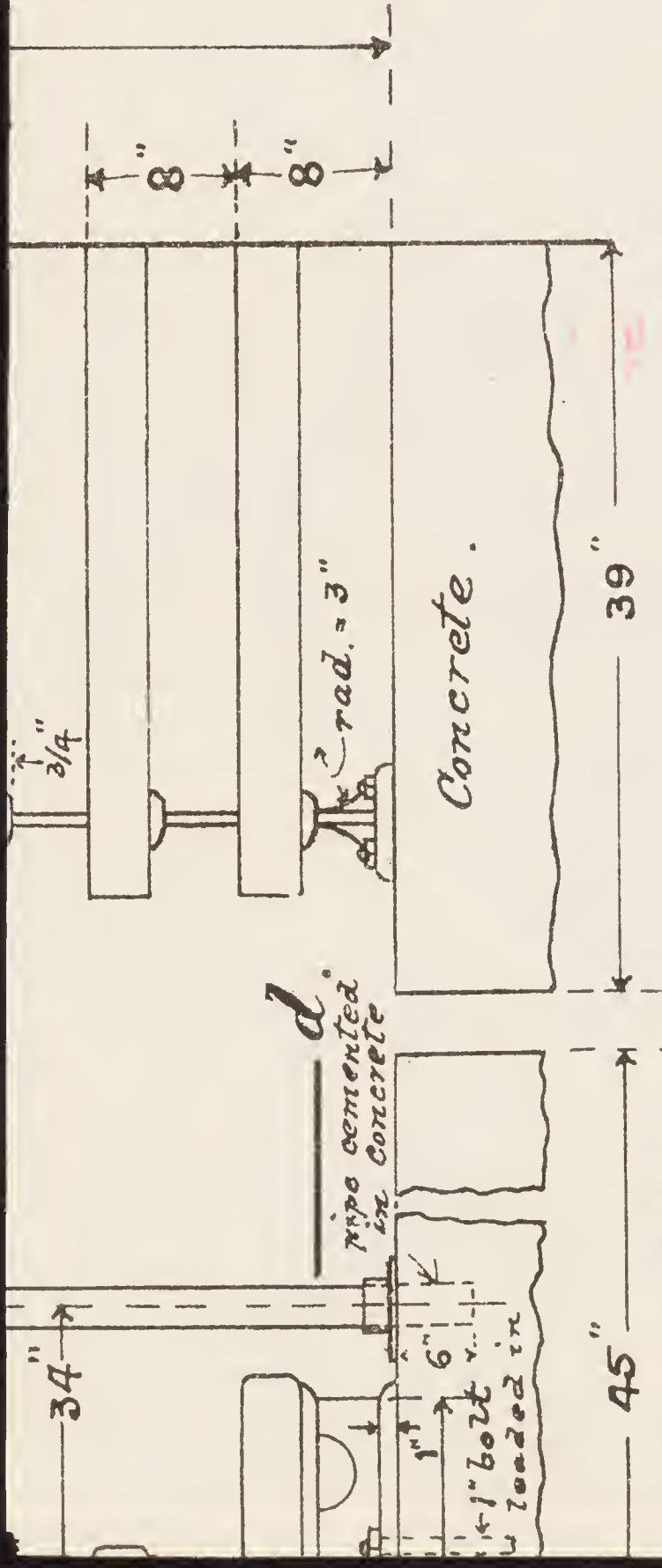
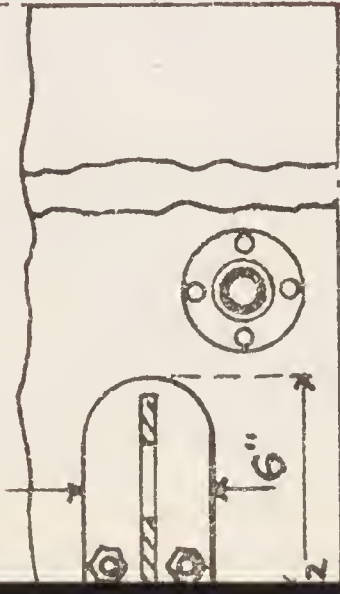


Fig. 6, Sec. dd.



Second floor window.

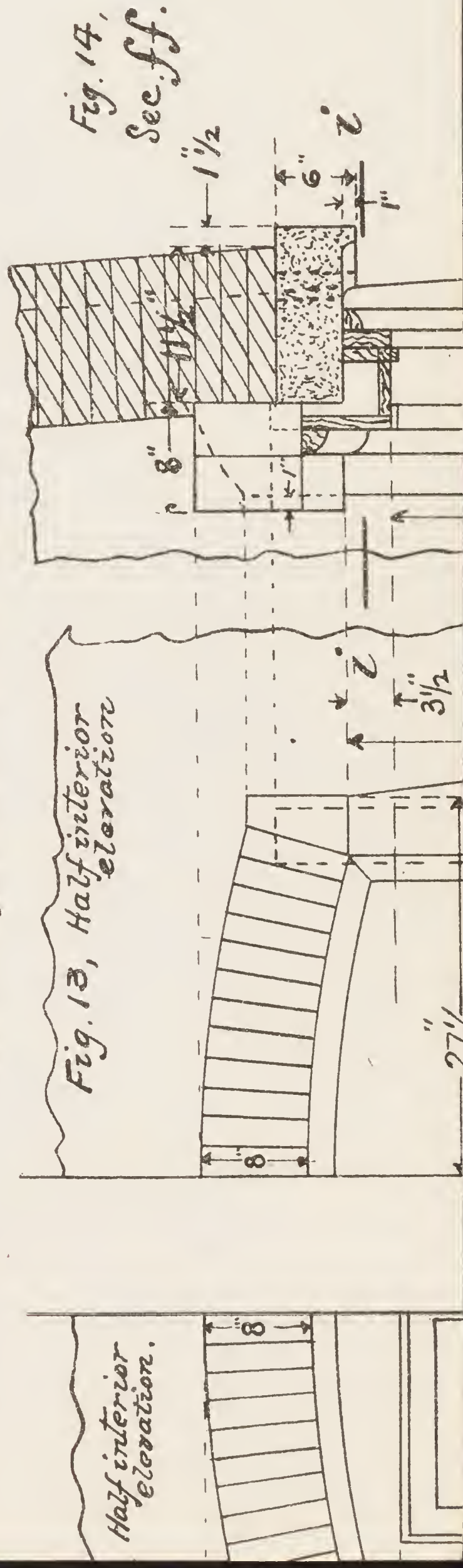


Fig. 14,
Sec. ff.

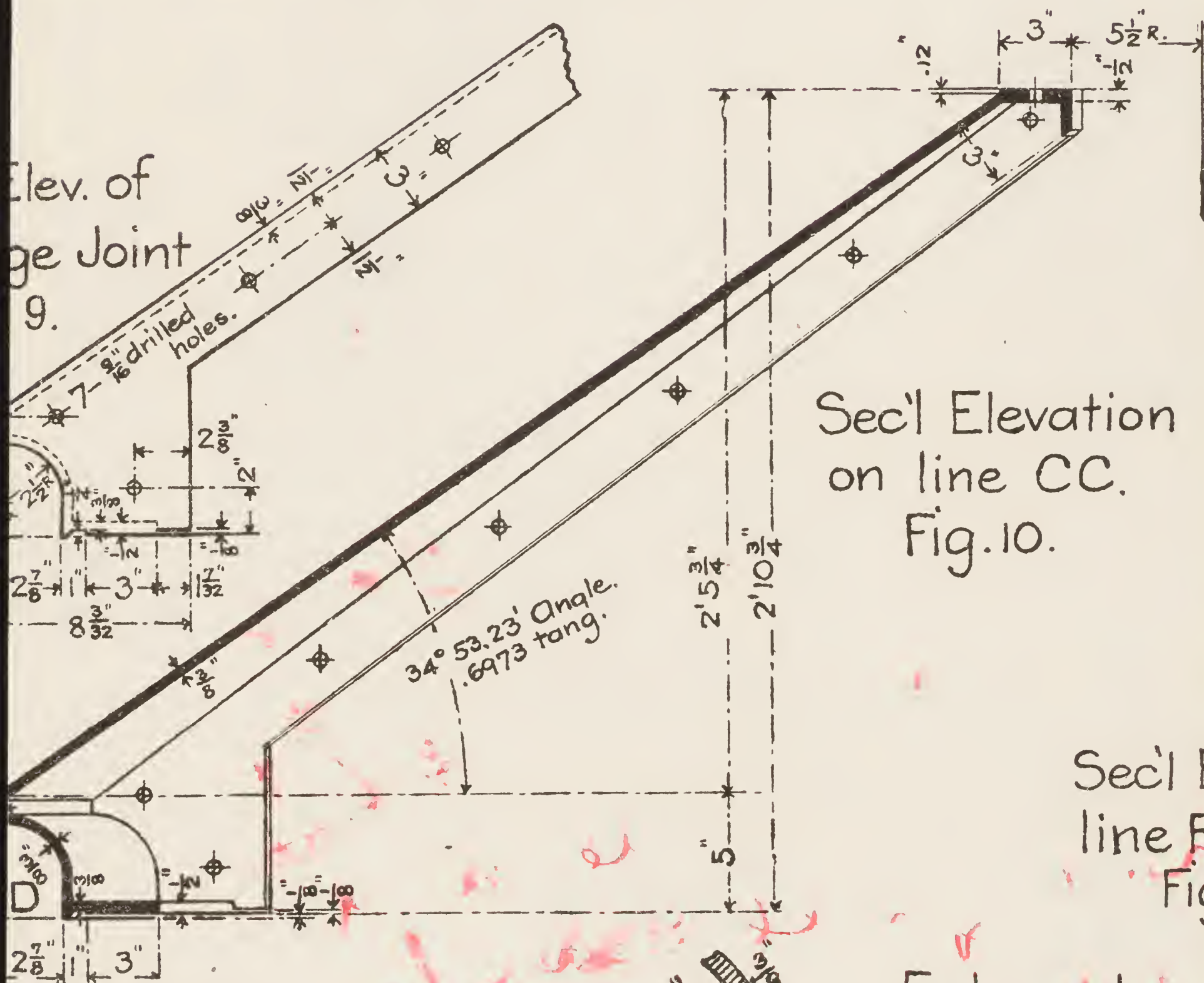
May 1913 p. 25 Pac. Fish

Mr. G. M. Alford, mgr. of the Standard Fisheries Co., believes that the time will come eventually when hauling will be practicable, with the growth of the market for sole, skate and other fish not demanded very much at present.

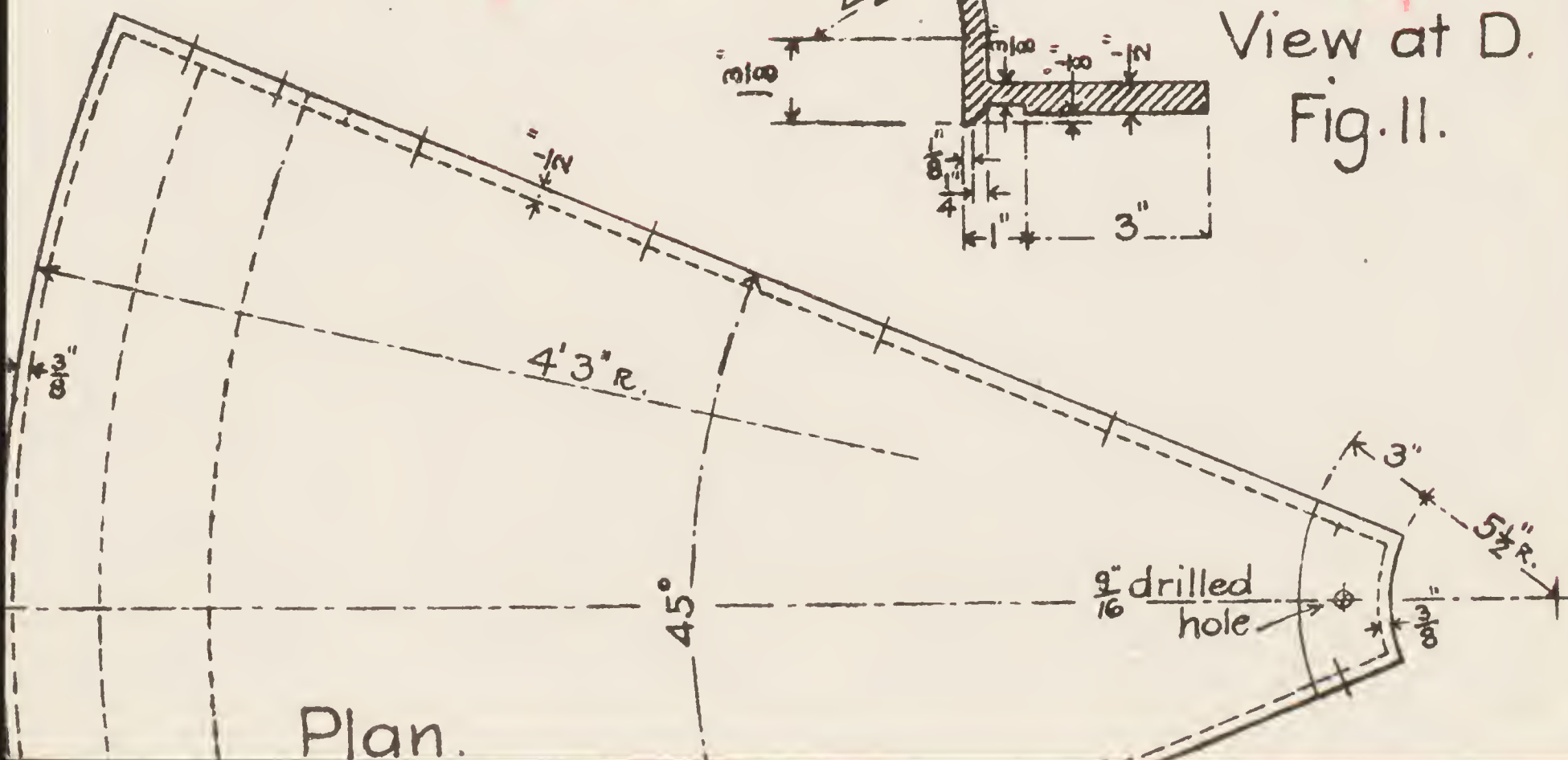
Mr. Alford claims that his co. was the first to take up hauling in recent years. Their experience, however was that hauler was so small in proportion to the catch of the cheaper fish unmarketable fish that it was not profitable. It has been asserted that the nets were torn but the real reason is said to be because of the unmarketable fish.

That the market will however

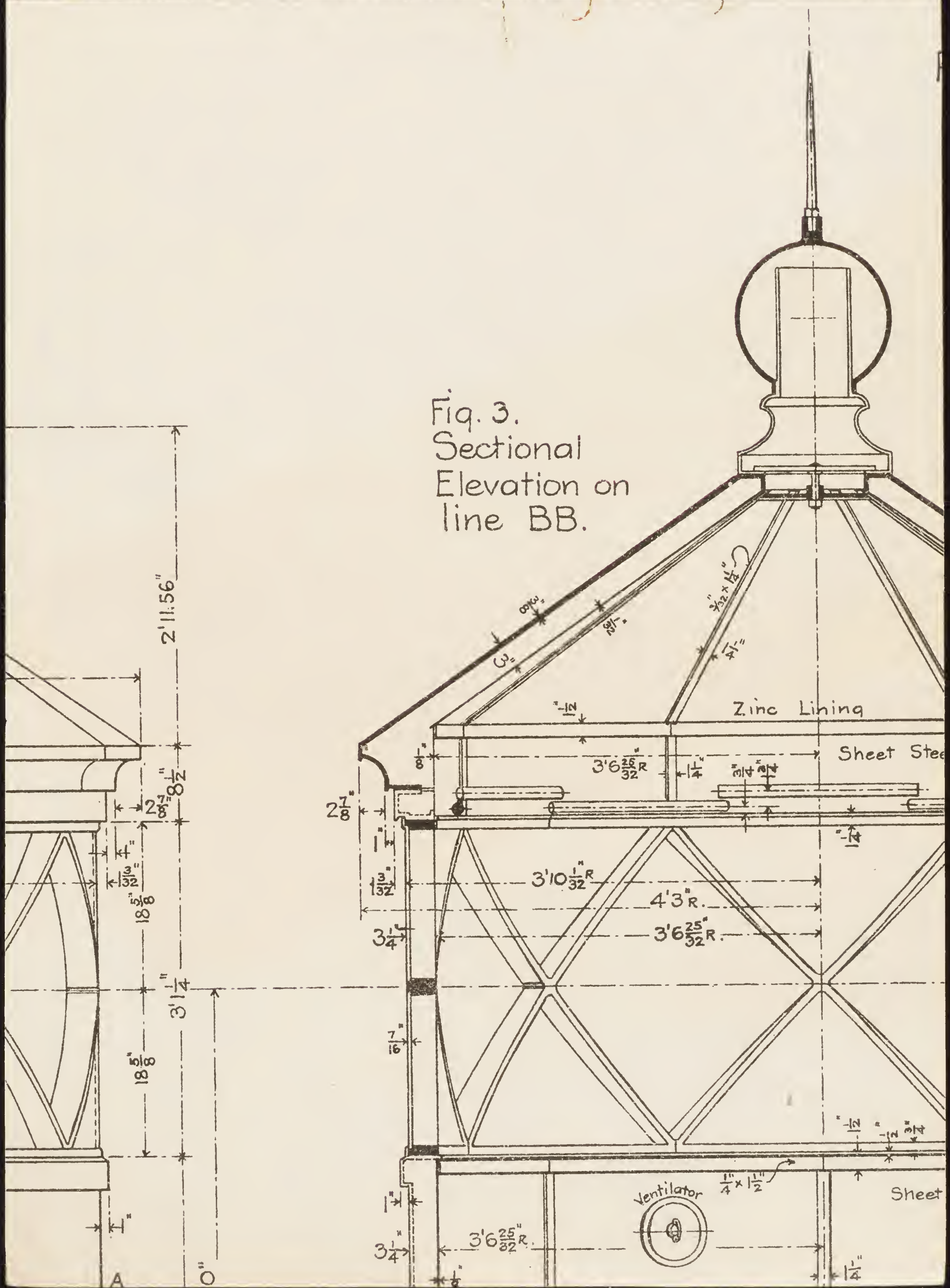
n for Apparatus of the 4th, 5



Enlarged
View at D.
Fig. 11.



May 1913 p. 25 Pac Fish
grow for the cheaper fish, just
as it has done in England. is
the opinion of Mr. Alfred. Most
householders he says are not
aware of how cheaply one can
live from fish, and in these days
there is not the incentive to
forsake beef for the cheaper fish
from the prosperity that the country
enjoys. ~~Ultimately~~ He declares
fish will be more in demand
and trawling will again be
taken up.

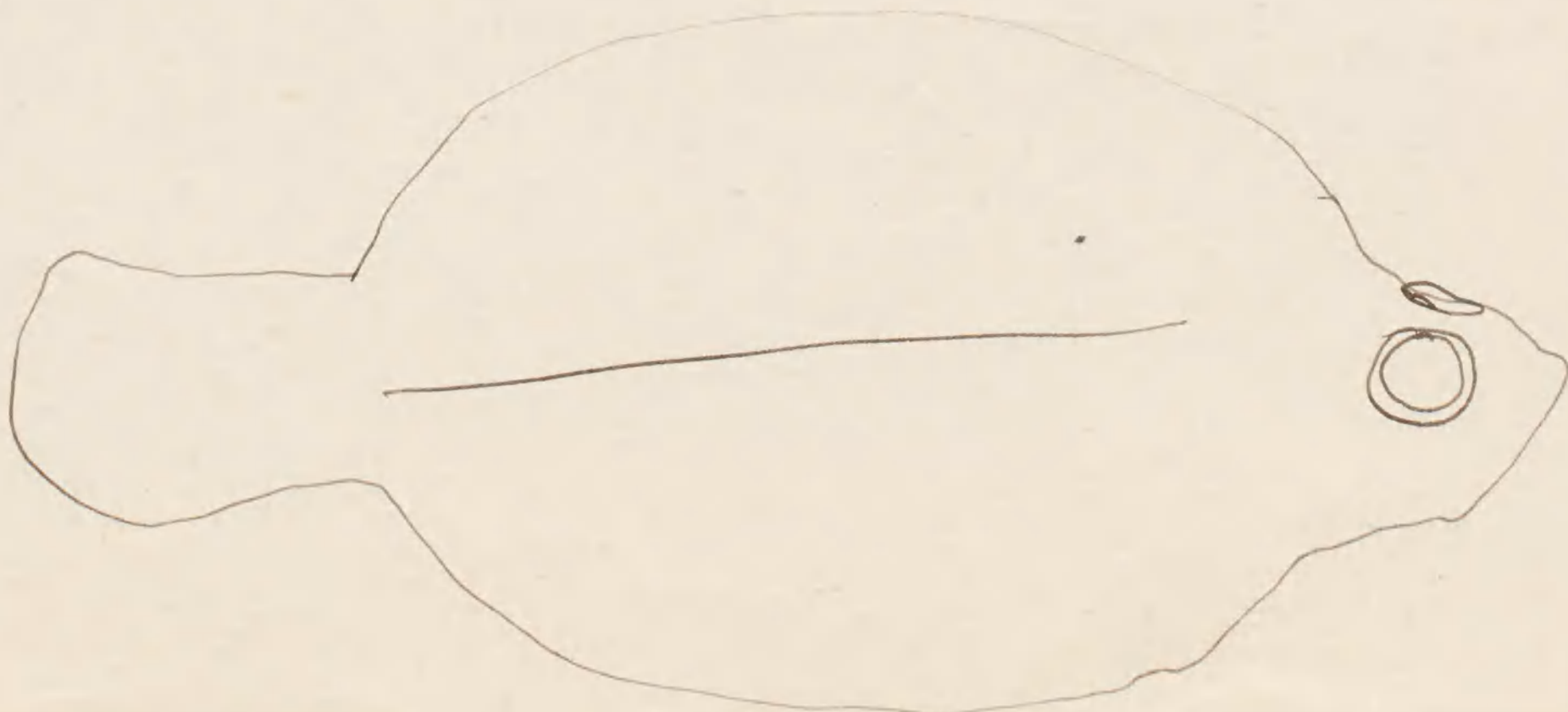
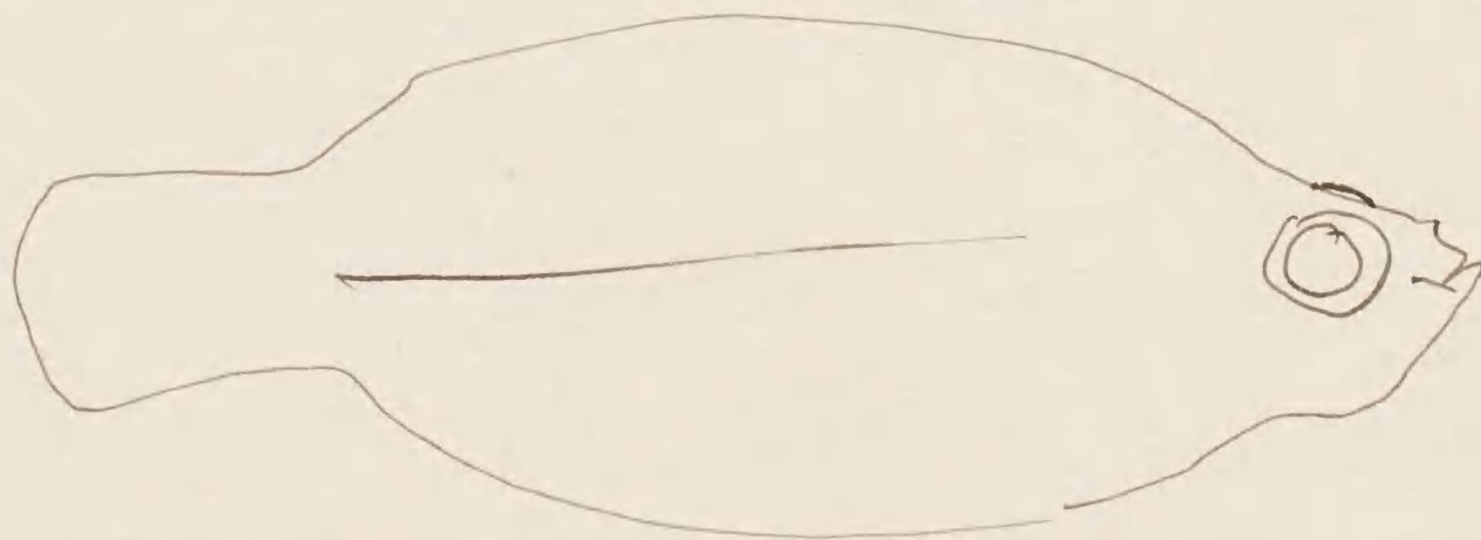
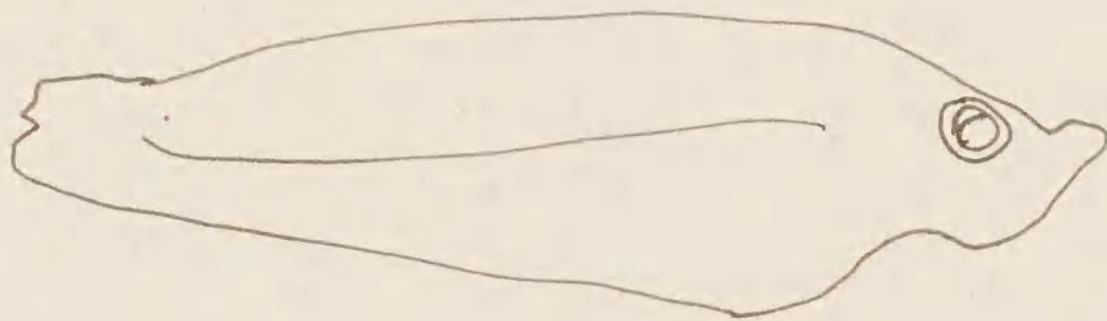
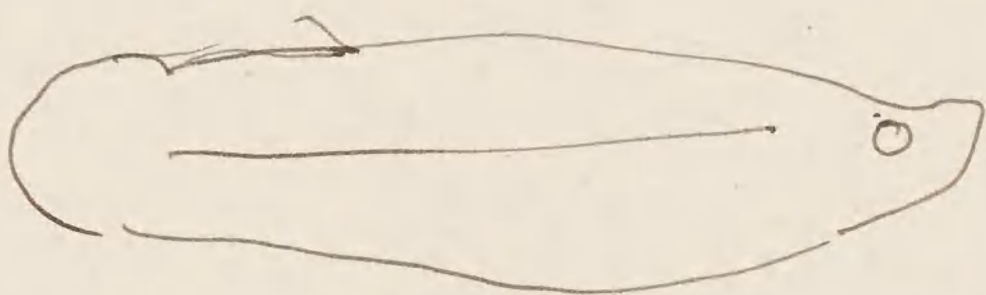
[illegible][illegible]

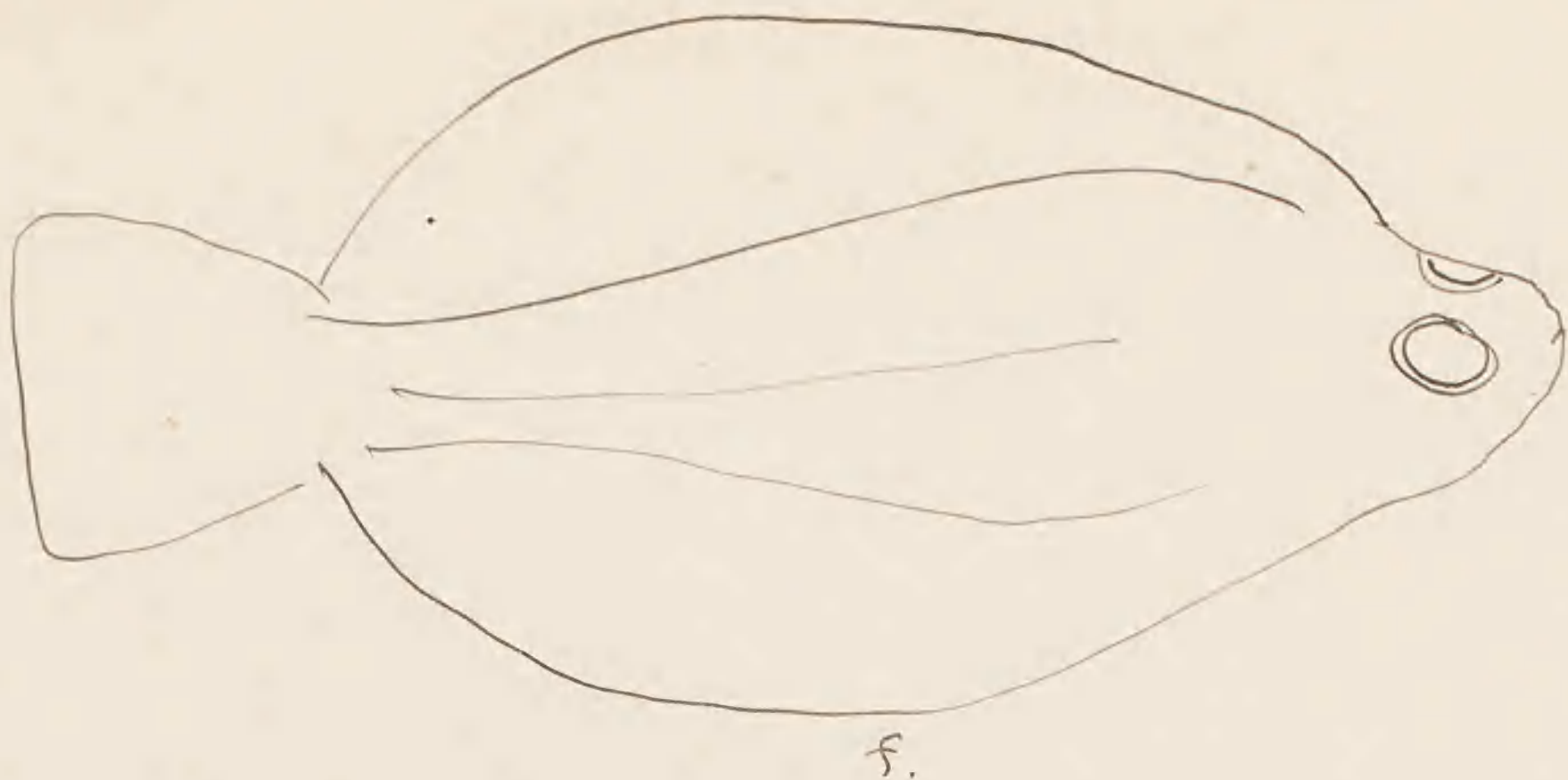
* *Hippoglossus vulgaris* Tem.

Fig. 72.

a.	Larve vom	22.5.04.	13,5mm.	Lanz westlich der Färöer
b.	"	"	20.6.04 16.25."	" Dänemarks Strasse
c.	"	"	20.6.04 18	" " " "
d.	"	"	19.6.04 22	" " " "
e.	"	"	20.6.04 27	" " " "
f.	"	"	9.7.04 34	" " " "

nach. Johs. Schmidt.





- * 1875 Collett, R. Norges fiske p. 134 (ist nicht
~~Aythya~~ ~~condem~~ ~~Plem.~~ cynoglossus.
 1892 McDutch, W.C. 10th annual rep. fish. board S. Scotland
 p. 285-7.
 1893 dr Ebenda 11th report p. 244
 1893 Petersen C. G. Joh. Rep. of the Danish
 biological station IV p. 130, pl II, fig 21? (fig 20
 ist Pl. cynoglossus.)
 1904 dr. ~~Meddelelsen~~
 Meddelelsen f. Kommissionen f. havunder-
 søgeiser. Serier fiskeri Bd. 1, p. 3.
 1904 Schmidt, Johs., Ebenda Bd. 1. 3 p. 5-8
 pl. I fig. 5-12.

Der Heilbutt wird fast auf allen wichtigen Fischgründen in Eisener sowie in Herden des atlantischen und pazifischen Ozeans angetroffen. Im atlantischen Gebiet geht er südwärts bis zur Biskaya, ostwärts bis zur Murmanküste. In der westlichen Ostsee ist er vereinzelt beobachtet, bei Island ist er häufig und bei Grönland wohl bekannt. Auf den Fischgründen vor der ostamerikanischen Küste einschließlich der Newfoundlandbänke spielt er eine sehr große Rolle.

Die Laichzeit fällt in der Nordsee (?) und an den ~~Skandinavischen~~ skandinavischen Küsten in die Zeit von Ende Februar bis Mai, besonders April bis Anfang Mai, bei Island in den Juni bis August.

Die Eier sind ziemlich sicher freischwimmend; doch sind sie als solche noch nicht gefangen, jedenfalls noch nicht beschrieben worden, vielmehr nur aus dem reifen Ovar bekannt. Es sind wahrscheinlich die größten planktonischen Eier, welche existieren, ~~ihre~~ ihr Durchmesser beträgt wohl wohl 3.1 bis 3.8 mm. Sie haben einen kornigen Inhalt ohne Öl und eine zähe Eihaut, aber wahrscheinlich keinen perivitellinen Raum von erheblicher Größe. Über ihre Entwicklung ist nichts bekannt.

Auch über die Larven ist erst in neuerer Zeit Sicheres bekannt⁽⁴⁾ geworden. Zwar hat G. O. Sars im August 1871 in der großen Tiefe vor Christiansund eine noch fast symmetrische Plattfischlarve erbeutet, die zuerst von Collett (l. c.) beschrieben und später von C. G. Johs. Petersen (l. c. fig. 20) auch abgebildet wurde und von beiden als zum Heilbut gehörig angesehen wurde. Doch handelt es sich nach Petersens eigenen neueren Erklärungen hierbei sicher um einen *Pleur. cynoglossus*. Indessen hält Petersen es für möglich, dass die von ihm am gleichen Orte als *Platysonatichthys* abgebildete und bei Grönland gefangene Larve vom 51 mm. Länge als *Hippoglossus vulgaris* anzusehen ist.

Die einzigen zuverlässigen Beschreibungen und Abbildungen von Larven des Heilbut hat Johs. Schmidt (l. c.) in neuester Zeit gegeben. Sie beziehen sich auf Entwicklungsstadien von 13.5 bis 34 mm. Länge, welche bei Island und den Färöer vom Ende Mai bis Anfang Juli gefangen wurden.

Die jüngste Larve (Fig 72a) besitzt außer der hypuralen Anlage der Schwanzflosse noch keine sichtbaren Flossenstrahlen. Die eigentümliche aufgestülpte Schnauze verleiht dem Fischchen ein sehr charakteristisches Aussehen. Die Larvalen Brustflossen sind ziemlich groß

desgleichen die Augen. Das Pigment ist ~~da~~ sehr schwach ⁽⁵⁾ und seine Verteilung wenig charakteristisch. Es findet sich in einigen zarten Längsreihen auf dem Körper und in kleinen Ansammlungen am Rande der Flossensäume. Vorderkörper und Kopf sind fast pigmentfrei; neben dem schwarzen Farbton ist rot an den Rändern der Muskelsegmente in äußerst zarten Pünktchen vertreten.

Das nächste Stadium von 16.25 mm. Länge (Fig 72 b) zeigt nur geringe Fortschritte in der Entwicklung. Die Notochorda ist stärker aufgebogen, die Flossenträger werden deutlich an der Basis der Flossensäume. Die Zahl der Wirbel, welche Vert: 16 (17) + (32) (33) 34 (35) beträgt, lässt sich bereits feststellen.

Beim folgenden Stadium von 18 bis 20 mm. Länge (Fig. 72 c) geht die Entwicklung der Stacheln in den unpaaren Flossen weiter, aber erst bei 22-23 mm. Länge (Fig 72 d) lässt sich ihre Zahl einigermaßen feststellen: A: 71-83, D: 96-108. Inzwischen erscheint das linke Auge bereits deutlich aufgerichtet. Die Bauchflossen sind als zarte Knospen sichtbar. Das Pigment beginnt jetzt sich in Gruppen zu sammeln, von denen auf der Analflosse drei ziemlich deutlich sind. Dieser Prozess macht in der Folge weitere Fortschritte.

Par.
Bei 27 mm Länge (Fig. 72e) sind auf der Afterflosse 4 ⑥
Pigmentflecke in ziemlich gleichen Abständen sichtbar
und dazwischen kleinere intermediäre, ferner auf der
Rückenflosse 5 bis 6 grössere Gruppen, zwischen denen
ebenfalls kleinere liegen. Der Rand des linken
Auges ist jetzt über der Körperkontur sichtbar. Die
Brustflossen sind noch strahlenlos und gross, die
Bauchflossen deutlicher geworden. Die ganz
pigmentlose Schwanzflosse ist vollkommen ausge-
bildet.

Allmählich beginnt nun auch das Pigment auf
dem Körper und eine schon früher sichtbare An-
sammlung auf der Stirn deutlicher zu werden, was
bei den 30 mm. langen Sarven erkennbar ist, ^{und} noch besser
bei der grössten bisher bekannt geworden planlonischen
Sarven von 34 mm Länge (Fig. 72f) hervortritt. Bei
dieser ist das linke Auge nahezu auf der Kante
angelangt. Die Brustflossen sind noch immer
~~sehr~~ sehr gross, ebenso die Schwanzflosse, ~~wo~~ welche
hinten gerade abgeschnitten ist. Das stark vermehrt
vermehrte Pigment ist auf der rechten Körperseite
reicher als auf der linken und verleiht dem ~~ganzen~~
inzwischen weniger durchsichtig gewordenen Fischchen
ein marmoriertes Aussehen. Auch auf den unpaaren
Flossen ist das Pigment sehr vermehrt und selbst auf

der Schwarzflosse sind in basalen Teil der-
selben 2 kleine Ansammlungen aufgetreten. (7)

Die Körpergrösse, in welcher die meta-
morphose abgeschlossen ist, und das Leben
am Grunde beginnt, ist ~~noch~~ bekannt.

I. 177-180

Nordischer Plankton,

I. Eier und Larven von Fischen

1. Teil Von Prof Dr. E. Ehrenbaum,
Helgoland.

Herausgegeben von

Brandt und Apstein.

Keil und Leipzig - 1905

~~Final Report. Laguna Marine Lab.
at Long~~

~~Pomona College
May 1912~~

~~Pub. by Dept. Biol. Pomona College
Claremont Calif.~~

~~Coll - Luning fish~~

Jordenskjold

Will J. Thompson Sanford Univ.

(The Provincial Fisheries Dept. of
British Columbia.

See Pac. Fisherman Nov. ¹⁹14 p. 84.

Females grow ~~more~~ rapidly & attain
larger size than males.

Reach XIX years of age.

~~males~~ ^{males} 40-44 in. ♀ at 60.

Av. ♂ length 34.8

" ♀ " 38.3

One or other sex predominates at given
time or bank. proportion ~~also~~ varies
on successive days.

Proportion of head into body length of
fish from various places seems to
indicate occurrence of local races.

Halibut Food
DEPARTMENT OF COMMERCE

Halibut 1 Solea 1 Solea 1 Eupagrus berlandieri.

R. A. Todd.

The halibut feeds ~~on~~ ^{on} fish + crustaceans
J. T. Cunningham

It is known to live mostly on other fishes, but it
also takes crustacea ~~and~~ I have found the remains
of sea urchins in its stomach

J. Wemyss Dillan

Sand lance ~~and~~ + crabs. A. B. Alexander.

small halibut eat crabs and sand lance
in shallower water
on banks ^{removed} away from ~~the~~ shore line gray
cod is principal food.

Range of crabs, sea anemones, star-
fish, sand lance, dog fish, cod, rat fish and
an occasional red cod.

arrow toothed halibut, octopus

57 90 57
590

M. H. B.

Will C. Thompson; Stanford

DEPARTMENT OF COMMERCE

- | | | |
|---|-------------------|--|
| 1 | 1 | Reliaster |
| 1 | | remains of small decapod crustacean |
| 4 | | ^{cartilaginous} remains of small fish. |
| 1 | | young octopus in stomach |
| 1 | | few vertebrae, ribs + stolith saved. |
| 1 | | with probably <i>Synodus lucioceph</i> L. 83 mm. |
| 1 | | with <i>Osmerus attenuatus</i> L. 125. |
| 1 | | with partially digested skate in stomach |
| 1 | | " skate in stomach |
| 1 | | with 1 skate 9 in wide, 1 lake, 1 roe, 1 herring. |
| 1 | | 1 lemon sole <i>Glyptocephalus zach</i> ^{sim} zach |
| 1 | | 1 lake in stomach |
| 4 | (Aug 15)
(130) | ling cod, salmon, red cod. |
| 1 | (Aug 18) | one with partially digested salmon |
| 1 | | 9 sea anemones (pieces of <i>Fernichtids</i>)
included in 9 |
| 1 | | 1 flounder in stomach |
| 1 | | do do do |
| 1 | | 2 ft fish backbone in stomach, ling cod? |

DEPARTMENT OF COMMERCE

The largest bulker recorded 720
from the Coast of Sweden.

DEPARTMENT OF COMMERCE

The halibut is the largest and most powerful of the flat fish and is said by the fishermen to drive all else before it.

Distribution

It is essentially a cold water fish and as a general rule the colder the water the better the quality of the fish taken therefrom.

Department of Commerce and Labor

Banks:

Chart. 5900

Seal Rk. S. E. S. E.

N. E. run till Prince Id. came in sight.
16 fms. depth. 15 miles offshore.

Fish:

Cape Terrello - Goat Id.

35-40 fms.

($\frac{1}{2}$ ton fish per day av. wt. 50 lb. L. 120 lb.)

Redding Rk.

Ground Trinidad

Pt. Gordo, strong tide, 230 small halibut
in 3 hrs.

Whales head, birds eggs.

Above bottoms rocky contrary to direction
given on chart.

With Appendix

Tillamook June 22.

W. O. Chesebrough & Son:

Informed me there is not any fish caught out of Tillamook at present but there was a boat at one time with four men and they caught 17 fish that run in weight from 20 lb to 70 lb. but the boat was lost - having struck in the bar the engine went through the side and they did not try again. At the time of the accident the boat was 15 miles off shore - Salmon is caught here in which sixty boats are engaged in the business and they do very well for a while - He also said a boat can't get up the river and it cost too much to ship fish from here to do any business with halibut. a thousand will last a week and you can't do much shipping them to Port Land as they must handle them for a small concern.

Salmon fishermen some of these
make \$1,000 others not so much.
There are two men in a boat and they
have 120 fathom of net which is 15
meshes deep $9\frac{1}{2}$ in mesh they use a
Columbia river boat 4 H. gas engine
He (W. O. Chase) said a man named
Hansen is trying to get up a cold
storage plant a short distance from
Tillamook. It is reported he has ~~two~~
two fish boats coming from Seattle.
They have a place down here or have
an option on one they want to pay
\$5000 and they had \$500 but can't
make the other \$300. but the man
said he would run it him self
he is a fish-man (W. O. Chase) but don't
think much of Hansen they surmise
he is after a bunch of some farm's change
that is what the Tillamook people
think but he may be all right. He
was gone fishing for trout today.

and we will not³ see him. Mr. Hudson
does not know any thing about Josh
whatever, but he had a man with
\$25,000 in San Francisco intended but
he got cold feet and dropped out, and
is now after another that is the
report even the less might be false-

Tillamook June 22nd
Tillamook Clam market
J. Bibby manager

Informed me he used 500 lbs halibut
a week his fish is shipped from
Portland, never heard of any fish
being caught in Tillamook but
has a good business in clams
and crabs - He is about to close
his business in Tillamook -

Ullcaumuk June 22 -

Mr H. Small owns and operates
the Ice plant, which makes five tons
a day but they use only about two tons.
He runs the plant with a 15. H power
gas engine. He also runs 16 boats
which he sends fishing that close
very well. He requires the men to
fish there on net and they sell
him the fish they fish eight months
but they don't get many in winter -

Tillamook

Spokane

Mr. R. E. Velt -
Portland Press Club -

Mr. Velt gave me those charts
which we heard so much about.
He was leaving Portland for New York.
He also had me see the fish which
the Decewah got and they were very
good fish averaging 15 lbs they are
brought in Portland and they have had
work to dispose of them having to
so much fish in Seattle. I sent
a very inferior fish for sale in Windsor
where it for 25 ct. here they may be called
Decewah fish is quoted at 12 ct.

Capt Velt is part owner of the
Decewah boats known as
Deep Water Boat

Decewah had 22.00 lb for which
they rec. $33\frac{3}{4}$ lb - crew shared 39 -

$$\begin{array}{r}
 2 \overline{) 77.00} \\
 \underline{38.50} \\
 2.50 \\
 \underline{2.95} \\
 43.95
 \end{array}$$

$$\begin{array}{r}
 57.54 \\
 \underline{43.95} \\
 13.59
 \end{array}$$

James Smart -

One of the crew of the Decatur told
me there was some fish in shore
now about six or eight miles off
the light Yaquina Head - they got
some clay - he said you could
pick them up very quick - but he
did not think there was enough fish
there for a boat to do anything & few
fish in summer but they could not
find the bank out side of Hecla
bank -

Patience

Salmon

Mr. Nelson the man that runs the fish market said he does not handle to any extent but what they get is shipped from Portland & the trip the Decatur landed Hogen brought them and they think he got stuck as there is very little halibut used here it is all salmon they don't know any thing about halibut. The run of salmon this year is small averaging 8 lbs to 10 lbs which sold to the cannery for six cents under 25 lb & 7 1/2 ct over 25 lb. The cannery on most of the boats and they give 60 ct in the dollar and only fish tide work, but they do so night & day in the tide.

Polk

Aberdeen June 24th

I met Capt. Anderson went aboard
the Ella May she is getting for ~~the~~
steam-travel putting some heavy
warrior gear for lifting the boat.
Very expect to do well - as he
has his own market and can
handle a variety of fish - He
sells a quantity of fish up in
the logging camps intends to go
to the South to operate the
steam-travel. If it proves to be
a success or ill put his other
foot in it. He expects to go to
San Francisco with some of his
fish. The two framed traps he
fished north of Gray's harbor.
He will be ready in about
a week

A Jackson

Bender went on the flats today
(June 16th) she is going to load
up the river, is a steam
sawmill ^{drawing} 14 ft water. When loaded
will take 500,000 ft lumber. The
Commercial Club is buying the
town and it is a fine little
place but a boat cant get in
or out in any kind of bad weather.
at all. It is said she will not be
allowed to sail without a licensed
pilot - that is a hard thing to
get as there is hardly any one
acquainted with the river - but
ever put in time with steam to
get a license.

June 17th

Orate Capt. James Reeder -

Caught 25 fish average 20 lb
a very uneven run some as
small as 6 lbs which looks as
though there were not many when
these were caught. The small
ones sold to the market for
8 cts where they retailed for 2 1/2 cts

June 18th

Orville Capt Reeder -

Caught 4 halibut average 15 lb.
2 red cod - 2 lingcod. It was
blowing strong N.W. and
strong tides 7 miles from the
bar. I met Mr Wilson
a fisherman he said fish were
not very plenty except crabs
and clams - Crabs sold for 80c
a doz & clams would be 75c. and
clams 15 a basket -
Lingcod were very plenty -

June 18th
Capt Chambers boat Pilgrimage
got 1 halibut 2 red cod 2 ling cod -
8 miles off shore - strong current
he had 2 window weights - about
8 lb each. Could not hold bottom
Mr Sykes informed me he
got 48 fish 25 miles off in
200 ft of water.

New York -

Capt Chambers

I have engaged the boat Pelgrim
for \$10 a day. Capt Chamber is one
of the old time fishermen and
he has caught ten tons in one day
with 12 men. Fish is not plenty
now but later on they bunch up
and you can catch a lot when they
strut. He assured me there are
not large banks that have been
reported. But has seen good fishing
in August they run about 30 lb.
There is one spot 15 miles S. W. + S.
from the bar, and another one 16
miles W. from the Bar.

There is not any boat going out
of here today. The Pelgrim is ready.
but it is blowing from the
North West.

I met a ^{equipped} ^{equipped} the Kladen manager
of the cold storage the building is
30x30 Sharp freezer 10x14 cold storage
room 15x15 about 12 ft stud.
running with gas engine from tank
Motor 15 H power he has about
decided on buying the Daisy for
\$500 or so he told me - you can
buy stock. also said the Daisy
had not done much deep water
Bt did not understand fishing
but if there was a good man in there
he thought she may do well - he said
a boat could get out & in about
200 yards without any trouble.
and fish was inside in the summer
in shallow water. and some time
caught 70 in a day with hand-
line -

Olley 3. Will be ready
in about 10 days. Capt. Cannon takes
out parties for which he charges
are, a \$1 a day is considered a great
fisherman but in my opinion
he does not know the least thing
about the business - but is close
not make any difference as there
is not fish enough to supply
the local market.

Oregon
with
1913-14

Things that were written about in
letters that were burned
and many more experiences

①

Thurere Cobb has a tuby in
high chair when they entertained
me in Seattle. He was connected
with Bur. Fisheries in Seattle, but I
had gotten to know him before
he was transferred west.

Then there was the musician
at restaurants with musical
entertainment accompaniment
in Hotel Seattle. (x) artist
of triangular building in
basement; Pransin and I
had two rooms in Hotel Fey
one we made study and
sitting room sleeping in
the other.

Went to Portland to visit
with Jack Compton (lock footed)
go on went to an evening at Calif
Alumni group where Mary
Curdys Harrier poetess lived
she later died in poverty in N.Y.
starved to death.

(2)

That was when I checked
my brief case at Hotel Portland
and when I rushed off to get
tude to shift, they could not
find my brief case at the
shift (Albion) had to delay
sailing a whole day. The
people had left it in a trunk
behind a trunk (I guess is
moving some other & it
could not be found in the
rush.)

Went to Univ to see Kincaid
old host on table identified
the room.

3 Van Osten the crabs? Cysler man.

Rosie ^{was} the buson waitress in
lunch room where we lived
in crude hotel in New Port
Oregon.

Also William Schmitt had
a ranch out of New Port
but never got to see him
because of ship sailing

Franklin friend ~~the~~ man and
woman each married three
times. Had ^{but} three or four children
at each of ~~their~~ previous
marriages, and when they
all came visiting it was
a crowd

We took son at last marriage
and his sister out on a fishing
trip on our chartered launch
and for that after noon came
in so thick we could not get
back into the harbor. ~~So~~
had to spend night out there

(4)

roasted in the middle of the
deep. Calf made us
fish churde and of halibut
cheeks first time old ever
seen or eaten (had any).

I was anxious to see
Alma and almost got
a ride down on the Zilla May
halibut boat going to S.F.
but at last minute could
not make it and she
got wrecked in fog off
N. Calif. Coast. If I had
gone halibut survey would
have gone to pot

Got
old
feet
over time
latter part
of work
& was up
has to go

Travelled back in country
one day to see fire devastated
area just ^{agrees} burned stump of
trees of former forest.

Department of Commerce and Labor

DRISCOLL'S REPORT.

Information obtained by him, regarding halibut-fishing off Ore. and Wash.

* * * * *

June 17, 1914.

"Orobell", Capt. James Reeder, caught 25 fish averaging 20lbs; a very uneven run; some of the fish as small as 6 lbs., which looks as though there were not many where these were caught. The small ones sold to the market @ 8¢; retailed for 12½¢.

June 18, 1914.

"Orobell", Capt. Reeder, caught 4 halibut averaging 15 lbs., 2 red-fish, 2 "ling-cod (cultus-cod)", seven (7) miles from the bar; there was a strong N-W wind, with strong tides.

I met Mr. Wilson, a fisherman; he said that fish were not very plentiful; crabs were selling @ 80¢ the dozen, and would sell @ \$1.00 later; clams were quoted at 15¢ the basket. Ling-cod were very plentiful.

* * *

The "Pilgrim", Capt. Chambers, got 1 halibut, 2 red-cod, 2 ling-cod, 8 miles off-shore --- strong current; Capt. Chambers said that he had two window-weights, about 8 lbs. each, but could not hold bottom.

* * *

Mr. Sykes informed me, that he got 40 fish, 25 miles off-shore, in 200 fathoms of water.

* * *

The following information was obtained from Capt. Chambers, an old-time fisherman: The "Pilgrim" is ready to go out today (June 18), but there is a hard blow from the N-W. The "Pilgrim" can be procured for \$10.00 per diem. Fish are not plentiful now, but later on they will

Department of Commerce and Labor

bunch-up, and many can be caught when they strike; in August they average 50 lbs. There are no large banks, as has been reported; but there is one fishing-spot 15 miles SWxS from the bar, and another 16 miles W.

* * *

Interview with Mr. Maiden, manager of the cold-storage plant: The building itself is about 30x30 feet; the sharp-freezing room is about 10x14 feet, with a capacity of perhaps 6000 lbs; the cold-storage room is 15x15x12 feet; a Fairbanks-Morse gas-engine of 15 H. P. has been installed.

Mr. Maiden contemplates buying the Daisy for \$5000.00; the boat has not done much in deep water, but he thought she might do well, with a good man in command.

Boats can get in and out of the harbor without any trouble, during six months of the year.

During the summer, the fish are inside, in the shoal-water, and as many as 70 in one day have been caught with hand-lines.

* * *

The "Ollie S.", Captain Carner, will be ready in about ten days; Capt. Carner takes out parties, for which he charges at the rate of \$1.00 per diem for each person. He is considered a good fisherman, but in my opinion he does not know the least thing about the business; this makes no difference, however, as there are not fish enough to supply the local market.

* * *

The "Bender" is a steam schooner, drawing 14 feet; capacity 500,000 feet of lumber.

Department of Commerce and Labor

Captain Voeth, of Portland, is part-owner of the "Decorah"; from him was obtained a blue-print of his charted soundings off Newport.

The "Decorah" had 2200^(4 days work) lbs. of fish, which sold for $3\frac{3}{4}\text{¢}$; these same fish were quoted @ 12¢ retail. The crew received a net share of \$39.00 each.

These are very good fish, averaging 15 lbs; I note a very inferior fish for sale here, 3 lbs. for 25¢ --- they may be culls.

* * *

James Bonset, a member of the crew of the "Decorah", told me, that there are now some fish in-shore, six or eight miles off Yaquina-Head light; they got 8000 one day, but he did not believe that there are enough fish there to enable a boat to make the work pay; no bank was found outside of Hecata Bank.

* * *

TILLAMOOK, Wash., June 22, 1914.
Mr. Chase, of W. O. Chase & Son, informed me, that there are no fish caught out of Tillamook at present; at one time there was a boat (5 men) which took 17 fish weighing from 20 to 70 pounds; the boat was lost, and no further attempt at halibut-fishing has been made. Boats cannot go up the river, and the cost of shipping fish to Portland is prohibitive.

Salmon are taken here, and sixty boats are engaged in the fishery; the common type is the "Columbia-river boat", with a 4 H. P. gas-engine; there are two men to each boat, with 120 fathoms of net, 18 meshes deep (meshes $9\frac{1}{2}\text{'}$).

A man named Henderson is trying to start a cold-storage plant, a short distance from Tillamook; it is surmized, by residents of Tillamook, that this is merely for speculative purposes; rumor has it, that

Department of Commerce and Labor

Henderson is bringing two boats down from Seattle.

* * *

Mr. F. Small owns and operates the ice-plant, which makes something like five tons a day; the plant is run by a gas-engine of 15 H. P.

Mr. Small owns sixteen boats that do very well; these fish throughout eight months of the year, but do not get much in winter. The men are required to furnish their own nets; they sell their catch to Small.

* * *

Mr. I. Bibby, manager of the Tillamook Clam Market, informed me, that he uses 500 lbs. of fish each week; his fish are shipped from Portland, and he has never heard of any halibut being caught in Tillamook. He has a good business in clams and crabs, although he is about to close out.

Aberdeen, Wash.

June 24.

The "Zilla May", Capt. Anderson, is fitting for a beam-trawl, and putting in some heavy winch gear for lifting the net; she will be ready in about a week. The last two trips were north of Gray's Harbor.

Capt. Anderson expects to do well, as he has his own market, and can handle a variety of fish -- he sells a quantity in the logging-camps; later, he expects to go to San Francisco with some of his fish. He intends to go to the southward to operate the beam-trawl; if it proves a success, he will engage his other boat in it.

Department of Commerce and Labor

Astoria, Washington.

Mr. Colston, the man who keeps the fish-market, says he does not handle halibut to any extent; what he gets is shipped from Portland. The catch landed by the "Decorah" was bought by Hegan, who is said to have lost on the deal, since there is little demand for them here. The fishermen know very little concerning halibut --- the principal fish is salmon.

The run of salmon this year was small, averaging eight tons to the boat; the price paid at the cannery is six cents for fish under 25 lbs., seven and one-half cents for those over that weight.

The cannery owns most of the boats, which fish only during the tide and at that time work day and night. The men receive 60% of the catch, but they are required to sell to the cannery.

			Fish sold	Price rec'd	Value rec'd	Culls (mushy fish)
May 10	Decorah	Portland	4500	3	135.00	unknown
28	"	"	13,700	4	548.00	"
June 16	Decorah	Portland	22,800	3	684.00	unknown
* July 4	Washington	Seattle	29,000	3	870.00	20,000
6	Decorah	Portland	32,500	3 1/4	1056.25	unknown
11	Daisy	Newport	19,000	3 1/4	617.50	"
16	"	Seattle	30,000	5 1/2	1650.00	5000
22	Decorah	Portland	21,000	4	840.00	unknown
30	Daisy	Newport	17,000	5 1/2	935.00	"
Aug. 1	Seattle	Seattle	44,000	3	1320.00	30,000
4	Alaska	"	38,600	3	1158.00	20,000
# 10	Decorah	Portland	14,000	3 1/4	455.00	unknown
12	Daisy	Seattle	27,800	4 3/4	1320.50	12,000
20	Tordenskjold	"	55,000	3 1/4	1787.50	15,000
21	America	"	32,000	3 1/4	1040.00	25,000
22	Decorah	"	30,000	3	900.00	unknown
24	Alaska	"	56,800	3 3/4	2130.00	25,000
25	Daisy	"	27,000	4	1080.00	8,000
			60,000		2100.00	50,000
Sept. 1	San Juan	Seattle	74,000	3 1/2	2590.00	27,000
5	Athena	"	54,000	3 1/2	1890.00	27,000
7	Senator	"	28,000	3 1/4	910.00	15,000
8	Magnolia	"	30,000	3 1/4	975.00	10,000
11	Panama	"	46,000	3	1380.00	22,000
15	Omaney	"	40,000	4 1/4	1700.00	10,000
-	Daisy	San Francisco	13,000	10	1300.00	29,000
			799,700 lbs.	\$	29,271.75	300,000 lbs.
			785,700 lbs.	\$	28,781.75	323,000 lbs.

Fish Taken Newport Banks:

May 10 - July 30:	174,500 lbs (203,500 lbs)	= \$6,920.75 (\$7790.75)
Aug. 1 - Sept. 15:	625,200 lbs (596,200 lbs)	= 22,351.00 (21,481.00)
(exclusive of Aug 10th trip)	611,200	582,200
Totals	799,700 lbs	= 29,271.75
	785,700	28,781.75

Total fish taken: 1,099,700 lbs + (33,000? [estimated unknown]) = 1,132,700
(including mushy)

Figures not in parentheses are those in which "Washington" Trip has been considered an Aug. one. { Does not affect grand totals.

If trips of Daisy after Aug 1st be considered apart from ^{information given out as a result of the} Bureau's investigation, above figures would be:

Fish taken	Value
May 10 - July 30: 242,300 lbs (271,300) = \$ 10,621.25 (\$11,490.25)	
Aug 1 - Sept 15: 557,400 lbs (528,400) = \$ 18,650.50 (\$17,780.50)	
Totals 799,700 lbs = \$ 29,271.75	
785,700 lbs	28,781.75

* This trip of the Washington must have been made in Aug. no Seattle boats had been reported off banks prior to Carrolls leaving, date very probably Aug 4. (have written for verification of this).

† Aug. 10 trip of Decórah is included in totals of fish taken prior to Carrolls leaving. He did not take her over until the next trip. Was made and would have been irrespective of Bureau's investigation.

Note: In Aug. two other trips were given by Cobb, viz:

Star } but names were followed by statement "no fish."
La Paloma }

{ From list of halibut vessel arrivals, (Pac. Fish)

Star	July = 21	190,000 lbs	La Paloma	July 22 = 28,000 lbs
"	Aug = 14	190,000 "	"	Aug 7 = 40,000 "
"	Sept = 13	225,000 "	"	Aug 24 = 45,000 "
			"	Sept 12 = 20,000 "

Monthly Totals

July	119,500 lbs (148,500 lbs) = \$ 5,098.75 (\$ 5,968.75) = 5 trips (6 trips)
Aug.	354,200 lbs (325,200 lbs) = \$ 12,061.00 (\$ 11,061.00) = 10 trips (9 trips)
Sept.	285,000 lbs = \$ 10,745.00
May	18,200 lbs = \$ 683.00
June	22,800 lbs = \$ 684.00
Total	799,700 lbs = \$ 22,927.75

including mushy =

July 24 1900

Aug 50 920

Sept 60 714

Sept 714

Av. Trip 1913 (Pac Fish)

35,369

Schooners only

Monthly fish including

July 5,000 +

Aug 15,000 +

Sept 10,000 +

25

				sold		Value rec'd	Culls {	musky fish
May 10	Decorah	Portland		4,500	3	135.00	unknown	
" 28	"	"		13,700	4	548.00	"	1.000
June 16	"	"		22,800	3	684.00	"	
* July 4	* Washington	* Seattle?	*	29,000?	3?	870.00?	20,000?	
" 6	Decorah	Portland		32,500	3 1/4	1056.25	unknown	2.000?
" 11	Daisy	Newport		19,000	3 1/4	617.50	"	2.000?
" 16	"	Seattle		30,000	5 1/2	1650.00	5,000	
July 22	Decorah	Portland		21,000	4	840.00	unknown	2.000?
" 30	Daisy	Newport		17,000	5 1/2	935.00	"	2.000
Aug. 1	Seattle	Seattle		44,000	3	1320.00	30,000	
" 4	Alaska	"		38,600	3	1158.00	20,000	
Aug. 10	Decorah	Portland		14,000	3 1/4	455.00	unknown	4.000?
" 12	Daisy	Seattle		27,800	4 3/4	1320.50	12,000	
" 20	Tordenskjold	"		55,000	3 1/4	1787.50	15,000	
" 21	America	"		32,000	3 1/4	1040.00	25,000	
" 22	Decorah	"		30,000	3	900.00	unknown	10.000?
" 24	Alaska	"		56,800	3 3/4	2130.00	25,000	
" 25	Daisy	"		27,000	4	1080.00	8,000	
Sept 1	San Juan	Seattle		74,000?	3 1/2	2590.00	unknown	leave
" 5	Athena	"		54,000	3 1/2	1890.00	27,000	
" 7	Senator	"		28,000	3 1/4	910.00	15,000	
" 8	Magnolia	"		30,000	3 1/4	975.00	10,000	
" 11	Panama	"		46,000	3	1380.00	22,000	
" 15	Omaney	"		40,000	4 1/4	1700.00	10,000	
" —	Daisy	San Francisco		13,000	10	1300.00	29,000	
				<u>799,700 lbs.</u>		<u>\$29,271.45</u>	<u>300,000 lbs.</u>	<u>(33,000 more?)</u>

Fish Taken Newport Banks: Value:

May 10 - July 30: 174,500 lbs (203,500 lbs) = \$6,920.75 (\$7,790.75)
 (including Aug 10, Decorah, prior to Carroll's time leaving)

Aug. 1 - Sept. 15: 625,200 lbs (596,200 lbs) = \$22,351.00 (\$21,481.00)

Totals. 799,700 lbs. \$29,271

Total Fish Taken good + mushy 1,099,700 + (33,000?) = 1,132,700 (over)

In Aug two trips were given by Cobb viz:

Star
La Paloma

but followed by statement "no fish."

See accompanying Sheet.
for revision of Totals
because of daisy
trips

Taken from list of
halibut vessel arrivals
(Pac. Fish.)

Star in July 21-23 = 190,000
" - Aug 14-18 = 190,000
" - Sept. 13-15 = 225,000

La Paloma July 22 = 28,000
Aug. 7 = 40,000
" 24 = 45,000
" Sept. 12 = 20,000

* This Trip of The Washington must have been made in Aug. no Seattle boats had been reported off banks prior to Carroll's leaving, date very probably Aug. 4.

of Decorah

Note: Aug 10 trip is included in totals of fish taken prior to Carroll's leaving as it was made without information given out by Bureau being used. (Have written for verification of this)

Monthly Totals:

Av. Trip.

July 119,500 lbs (148,500) = 5,098.75 (5,968.75) = 5 trips (6); 23,900

Aug. 354,200 (325,200) = 12,061.00 (11,061.00) = 10 trips (9); 35,420

Sept. 285,000 10,745.00 = 7 trips; 40,714

May 18,200

683.00

= 2 trips

June 22,800

684.00

= 1 trip.

Total 799,700 lbs

\$ 29,271.75

= 25 trips;

~~March 18,200~~

July 5,000

Aug 155,000

Sept. 140,000

Av. Trips inclusive of mushy

July 24,900

Aug 50,920

Sept. 60,714

Av. Trip 1913 (Pac. Fish) = 35,369 lbs.
schooners only.

Average Trips, schooners only,

	Newport (1914) (Good fish)	(Good + mushy)	Total Seattle receipts (1914)	(1913)
July	23,900	24,900	45,883	43,052
Aug	35,420	50,920	45,701	42,729
Sept.	<u>40,414</u>	<u>60,714</u>	<u>38,343</u>	<u>38,657</u>
	86,034			
	100,034	136,534	169,927	164,438

Seattle figures give Total Trips^{*} inclusive of mushy fish; for this reason column of "good + mushy" is given under Newport returns. Only July, Aug, and Sept are given as in May and June but few desultory trips were made. The Sept. figures are up until Sept 15. as fishermen will no longer report on Newport fish as buyers are on lookout for them. This also will keep Sept records from being as complete as they otherwise would have been.

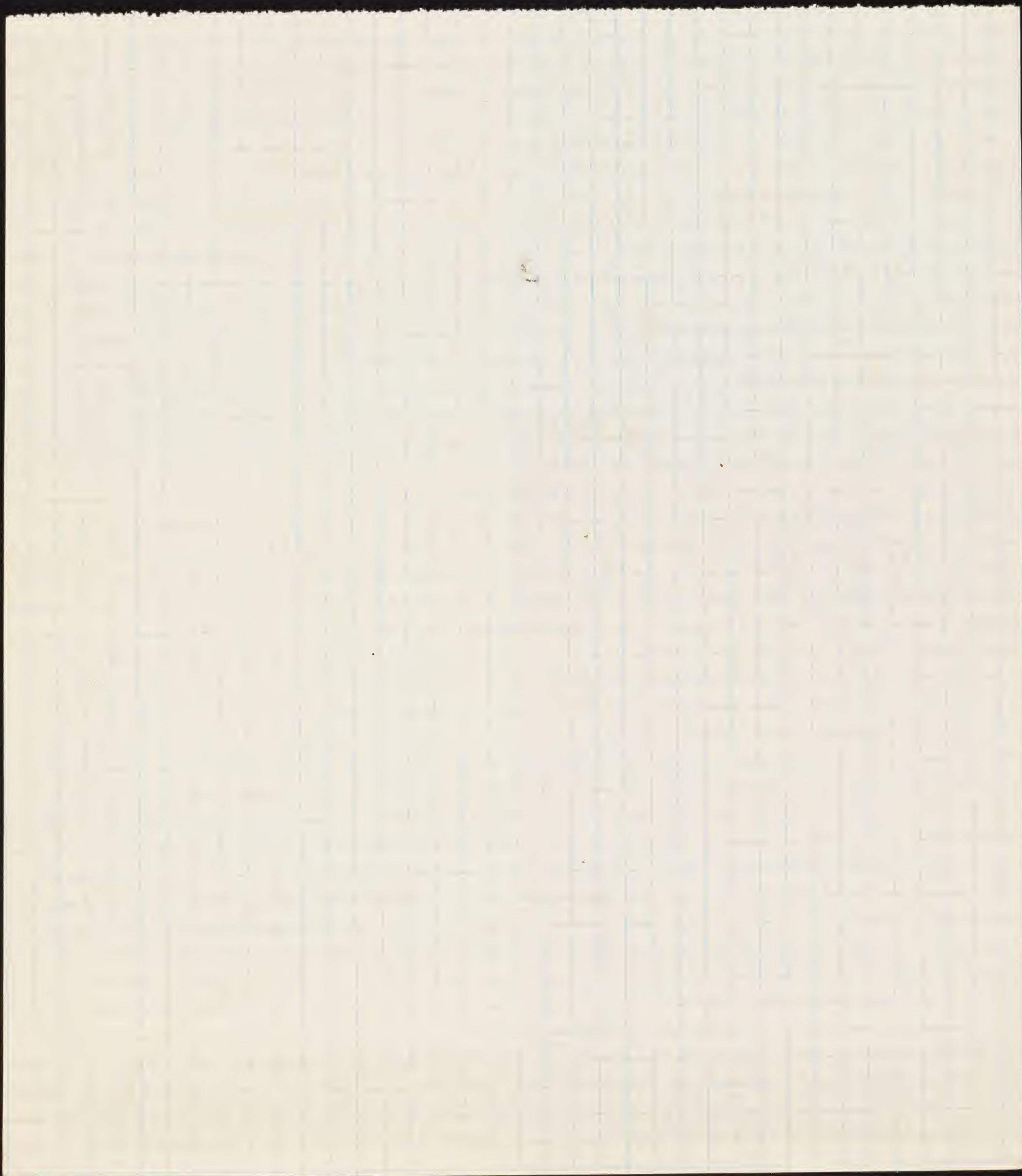
As records stand above the Newport Totals compare very favorably with average trips returned to Seattle during 1913 and 1914 in September alone even only for good fish running far ahead.

Aug. 25	Daisy	35,000
Sept. 5	Athena	75,000
Sept. 8	Senator	45,000

etc.

* i.e.:	Aug 1. Seattle	65,000	Aug. 21	America	50,000
	Aug 3 Alaska	60,000	Aug 22	Decorah	60,000
	Aug 12 Daisy	40,000	Aug 24	Alaska	80,000

Figs taken
from Pac. Fish.
for Oct. 14



				Pac. Fish.			L = Reid. X = Cobb O = Driscoll/Culls.
May	10	Decorah	4500	3 ⁴	Duplication	735.00	
	28	"	13700	4 ⁴		548.00	
June	16	"	22800	3 ⁴		684.00	
July or June	18	Daisy	39000	3 ⁴		1170.00	5,000
July	4	Washington	29000	3 ⁴		870.00	20,000
	6	Alaska	37000	3⁴		1170.00	
	6	Decorah	32500	3 ¹ / ₄		983.00	
	11	Daisy	19000	3 ¹ / ₄	Duplication	474.00	
	16	"	30000	5 ¹ / ₂		515.00	5,000
	22	Decorah	21000	4		1240.00	Note corr.
	30	Daisy	17000	5 ¹ / ₂		858.50	
Aug	10	Decorah	14000	3 ¹ / ₄		423.00	
	12	Daisy	27800	4 ³ / ₄		1132.00	12,000
Aug	4	Alaska	38000	3 ⁴		1170.00	20,000
	1	Seattle	44000	3 ⁴		1320.00	30,000
	20	Tordensgold	70000	3 ¹ / ₄		2117.50	15,000
	21	America	32000	3 ¹ / ₄		968.00	25,000
	22	Decorah	30000	3		900.00	
	24	Alaska	56800	3 ³ / ₄		1746.00	Unknown
	25	Daisy	35000	4		1400.00	See Dris
Sept	1	San Juan	74000	3 ¹ / ₂		2257.00	Not Known
	5	Athena	54000	3 ¹ / ₂		1647.00	27,000
	7	Senator	28000	3 ¹ / ₄		874.00	15,000
	8	Magnolia	30000	3 ¹ / ₄		928.00	10,000
	11	Panama	46000	3		1380.00	22,000
	15	Omaney	40000	4 ¹ / ₄		1610.00	10,000
Sept	—	Daisy	13000	10		1300.00	29,000

Total 911,400 lbs.

\$ 30,782.00

\$ 8,104.00 (prior to July 22)

Daisy June 16 40,000

" July 16 39,000

22,678.00 (July 22 - Sept. 15)

Daisy sold June 23.

Carroll left July 28

Figures I gave Dr Moore

If Trips of Hairy after Aug 1st be considered apart
information gets out as a result
from Bureau's investigation the above figures would be

Fish Taken

May 10 - July 30; 242,300 lbs (271,300) = \$ 10,621.25 (11,490.25)

Aug 1 - Sept. 15; 557,400 lbs (528,400) = \$ 18,650.50 (17,780.50)

Totals. ; 779,700 lbs = \$ 29,271.75

41560
137.5
1650
1787.5

VI

HYDROGRAPHIC TABLES.

The hydrographic records of the present cruise have been included in this report as Table V and Chart II. Ordinarily these data are published separately, but are appended here so that reference may be readily had to the various soundings made in the determination of the bottom.

Only the H series of numbers has been employed in designating stations. The various "sets" and trials for the sake of convenience and to avoid confusion have been referred to the number ^{of the} hydrographic operation conducted at the same time. The last previous number in this series was H. 5365, made in connection with the Biological Survey of San Francisco Bay.

The position of each station has been given by means of "bearings" and distances to the nearest prominent landmark. All bearings are "true".

The "charts" are those published by the Coast and Geodetic Survey.

The "time of day" is that taken at the beginning of the sounding operation at which the "depth" was determined.

For the "character of bottom" the abbreviations used are as follows:

blk ... black,	G ... gravel,	hrd ... hard,
brk ... broken,	gn ... green,	M mud,
crs.... coarse	gran .. granular,	rky ... rocky,
fine ... fine,	gy ... gray,	S sand,
For ... foraminifera,		Sh shells,

Shale, a new characterization is used to designate a siliceous, ^{at times calcareous,} hard pan composed largely of sponge spicules and

diatom tests with at times an admixture of a certain percentage of lime. It occurs at times as a pseudo-gravel, granular (gran); in the form of honeycombed boulders or easily crumbled rocks, rocky (rky.) and as a species of hard mud (hrd. M.).

The "air temperature" is copied from the ship's log. The accuracy of this reading is not to be relied upon to any great extent owing to the unfortunate placing of the thermometer casing near the stack.

The "surface" and "bottom" temperatures represent the corrected readings of tested Negretti-Zambra thermometers used in appropriate trip cases.

"Salinity" determinations were made by titration with the standard outfit supplied by the International Council for the Exploration of the Sea.

The "apparatus" used, where abbreviated, is in accordance with the following scheme:

Alb. samp. Albatross bottom sampler.
Ek. bot. Ekman water sample bottle.
O.P. drdg. Orange-peel bucket dredge.
P.N. bot. Pettersen-Nansen insulated water bottle.
Tan. Blish sdr.. Tanner-Blish sounding machine.

The "depth" of the trial is that at which the gear was used or operated and under the "drift" the direction and distance through which the dredge was hauled is given. ^{These} ~~and~~ are approximations. The "duration" is the length of time ^{consumed in} ~~of~~ towing the apparatus or allotted to a "set".

The chart (No. II.) of hydrographic stations has been taken from the Coast and Geodetic Survey charts Nos. 5,900, 6,000 and 6,100. The soundings are numbered in correspondence with Table V. in the order of their taking.

It will be noticed when chart I. is superimposed that the soundings of the same general character of bottom fall within the proper colored areas.

Pecten caurinus Gould.

Wrangell Alaska - Suislaw River Oregon

Sta 3081 61 fms N 46° Suislaw River, Ore.

" 3858

Port Townsend, Wash.

" 3866

" " "

Suidia foliolata Zube

6

Sta. 2870 58 f.

Off Grays Harbor.

6, 8

2882 68 f.

" Columbia River, Oregon. ^{Sept. 22-88} Oct. 13 "

2

3 29 "

" Tillamook Rk. " 18 "

1

4 " "

" " " " " "

1

3046 48 "

" Grays Harbor, June 7-89

1

7 50 "

" " " " " "

1, 11, 1,

3048 52 "

" " " " " "

8,

9 43 "

" Shoulwater Bay " " "

2,

3051 60 "

" Aceta Banks, Oregon " 8 "

1

3 64 "

" " " " " "

2

5 28 f

Off Yaquina Head " 9 "

3

8 " "

" Cape Conception " " "

1

9 77 "

" Silet Bay Oregon " " "

5

3060 28 "

" Tillamook Rk. ? Jan 13 "

1

1 23 "

" " " ? " " "

2

2 44 "

" " " June 13 "

1

3 42 "

" " " " " "

2

4 46 "

" " " " " "

17

3081 61 "

" Suislaw River Oregon Sept. 1 "

4

3 32 "

" " " 2 "

3

4 46

" Aceta Head Oregon " "

2

3081 Sept. 1. 45.8 61 fms
43° 59' N. 124° 20' W. gn. m. s. L.B.T.

This station has been marked on the
chart of "bottoms" with a cross ~~#~~ X

DEPARTMENT OF COMMERCE

Salpa sp. H. 5681

✓ Pennatula ^{aculeata Dan.} ~~aciles~~ Danielson, H 5714

✓ Pisaster papulosus Ver. H. 5714

✓ Luidia foliata Grube (10)
^{Yagr. Head. Ore June 9-1889}

✓ Orthasterias dawsoni Ver. H 5681
(Br)

✓ Pycnopodia helianthoides H 5714

✓ Metridium marginatum H 5714 (Les)

✓ Cribrina elegantissima (Brandt) July 21, Newport Oregon

Cribrina sp. H. 5732

Cribrina sp. H. 5735

ESTIMATE FOR HALIBUT SURVEY: APRIL 1 - JUNE 30, 1914.
91 DAYS.

1. Pilot (H.B. Joyce), @ \$5.00 per day	\$ 395.00
2. Mess dues of pilot, @ \$1.50 per day	113.00
3. Practical fishermen, 4 men @ \$2.00 per day	864.00
4. Navy ration for fishermen, @ 30¢ per day per man	150.00
5. Bait, (salt herring, 20 bls. were used on 1911 (cruise, 3 months), 20 bls. @ \$4.50	90.00
6. Cots, 4 for fishermen, @ \$2.50	10.00
7. Overhauling and renewing present halibut gear; (buoys, lines, hooks, anchors, thole pins, (dory scoops, etc.)	25.00
8. Installation of a power gurdy, (dependent upon (installation of at least one of the inde- (pendent hoisting units in estimate sub- (mitted October 29, 1913)	100.00
9. Additional gear, provisional estimate, 10 skates, second-hand gear, @ \$7.00 (Should it be found advantageous to cover (more ground than present equipment would (allow, i.e., fishing from ship).	70.00
10. Unclassified: 3 months provisionally bestimated @ \$100.00 per month (a, Possible detail for statistical work (of member of staff at Yaquina or Till- (amook. (b. Possible need of laboratory ashore for (titrating water samples. (c. Miscellaneous bills and expenses).	300.00

ESTIMATE FOR HALIBUT SURVEY: APRIL 1 - JUNE 30, 1914.
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8. Installation of a power gurdy, (dependent upon (installation of at least one of the inde- (pendent hoisting units in estimate sub- (mitted October 29, 1913)	100.00
9. Additional gear, provisional estimate, 10 skates, second-hand gear, @ \$7.00 (Should it be found advantageous to cover (more ground than present equipment would (allow, i.e., fishing from ship).	70.00
10. Unclassified: 3 months provisionally estimated @ \$100.00 per month (a, Possible detail for statistical work (of member of staff at Yaquina or Till- (amook. (b. Possible need of laboratory ashore for (titrating water samples. (c. Miscellaneous bills and expenses).	300.00

Table of "Sets" (Halibut Fishing Trials) Fish Taken (catch)

Set No.	Position	Reference Station.	Date 1914	Depth fathoms	Character Bottom	Number of Skates	Duration of Set	Bait	Number Halibut taken	Total Weight	Range Size	Average (between 10-80 lbs.)	Number first class (10-80 lbs.)	Average weight of first class fish	Sharks	Skates	Rock Rat-fish	Rock salmon	Red rock salmon	Black Cod	Cod	Hake	Sole
First Albatross Trip.																							
I	1. Heceta Bank (Heceta bears N. 78½° E. (true) distant light 31.5 miles)	537788	April 29	88-92	shale, rhy, gran; blk. S.; G. On trawl: { 1 rock honeycomb, 1 starfish, 1 Heliaster, 1 rock honeycomb full of life. }	2	1	salt herring	9	296	10-72	30.8	8	37.2	21	1			34	1			
II	2. Off Newport (Yaquina Head Light bears S. 80½° E. (true) distant 19.8 miles)	5403	May 2	96	gn. M.; fine blk. S. On trawl: { 2 in core, shape of a B. }	2	1	salt herring	1	21					1	4		8	3				
III	3. Heceta Bank (Heceta Light bears S. 74° E. (true) distant 29.2 miles)	544788	May 5	61	shale, gran; fine G. On trawl: { 1 starfish, 3-4 crinoids }	4	1	salt herring	4	88	10-38	22.0	3	26.0	80	3		3	1				
IV	4. Off Newport (Yaquina Head Light bears N. 71° E. (true) distant 13.7 miles)	548687	May 6	54-57	fine blk. S.; brk. jny. crs. gy. S. On trawl: { 1 basket star }	2	1	salt herring	8	157	7-33	19.6	7	21.4	36	2		9	1				
V	5. do (Yaquina Head Light bears N. 81° E. (true) distant 14.4 miles)	5492	May 6	62	shale, gran; fine G.	2	1	salt herring	4	67	10-23	14.2	3	15.7			1	24	6	3 red rock cod, 1 ling cod, 1 rock salmon taken on hand lines			
VI	6. Off Cascade Head (Cape Kiwanda bears N. 29° E. (true) distant 12.7 miles)	5518	May 7	48	fine gy. S. On trawl: { 1 anemone, dead scallop shells, 1 Heliaster }	2	1	salt herring							6	2	1	1	2 red-rock fish = 8 pinniger				
VII	7. Off Columbia River (Tillamook Light bears N. 87° E. (true) distant 25.1 miles)	5558	May 8	79	shale, gran. On trawl: { 1 starfish, 1 scallop shell }	2	1	salt herring	1	32					15	1		4			1		
Second Albatross Trip																							
8	8. Off Newport (Yaquina Light bears N. 26° E. (true) distant 10.8 miles)	556889	May 27	31-34	fine gy. S. On trawl: { 6 pennatulids, 2 starfishes }	2	1	salt herring	3	69	15-28	23.0	3	23.0		5					1		
9	9. Heceta Bank (Heceta Light bears N. 65½° E. (true) distant 27.8 miles)	5589890	May 28	66-68	shale, gran. On trawl: { 1 rock, 1 dia. disc, 1 fine pec. stone }	2	1	salt herring	5	108	9-40	21.6	4	24.7	1								
X	10. do (Heceta Light bears N. 63° E. (true) distant 30.0 miles)	5594	May 28	109	fine blk. S.; fine G. On trawl: { 1 rock, 1 dia. disc, 1 fine pec. stone }	2	1	salt herring	1	16					1	1		26*					
XI	11. do (Heceta Light bears N. 77½° E. (true) distant 31.6 miles)	5619	May 29	100	fine blk. S. On trawl: { 1 rock, 1 dia. disc, 1 fine pec. stone }	2	1	salt herring	1	42					1			5*					
Operation conducted out of Newport																							
XII	12. Off Newport (approximately as indicated on chart)	①	July 13	30	crs. gy. S. On trawl: { 9 pennatulids }			surf-perch salt herring	1	10							5						
XIII	13. do	②	July 14	30	crs. gy. S. On trawl: { 10 pennatulids, 2 anemones }	1 line * 38		clam* salt herring	2 43 45	124 -286 -1					6		1	5	2				

Some remarks column larger
Hake & rattfish columns could be eliminated and information put therein.

Addenda

Double-banked set.
Average sized red-rock fish weighed 11 lbs. Cultus cod weighed 20 lbs. 39½ in. long.

Double-banked set.
Red-rock fish, 1 small one: 7 lbs. 32 in. long, stomach contents saved. Cultus cod: 1, 14 lbs., 39 in. long, 2, 22 " 39½ " "

Double-banked set.
Sole: 4 lbs. 8 in. long. 3 red rock cod, 1 ling cod, 1 rock salmon taken on hand lines.

Double-banked set.
Sole: 1 1/2 lbs. in. long. Red-rock fish: 6 lbs., 22 in. long. Cultus cod: 14 lbs., 36 in. long, stomach contents saved. Skates: 1 29 lbs., 50 in. long, 1 36 " 59 " "

Double-banked set.
Octopus: 1 20 lbs., 45 in. long, 2 15 " 42 " " Skate: 29 in. long, 30 in. wide. Cultus cod: 11 lbs., 33 in. long.

Double-banked set.
Black-cod averaged 10.6 lbs., range 7-18 lbs., 8 very small. 18 lb = 35 in. long, 12 lb = 32 " " 10 lb = 31 " " 7 lb = 26 and 22 in. long.

Double-banked set.
Black-cod averaged 12 lbs., range 5-16 lbs. 16 lb, 33 and 36 in. long. 15 " 36 in. long. Shark app. 8 " 28 " " 48 in. long. 5 " 22 " sole.

Halibut and Hake taken on hand lines.

* flounder gear
2 halibut and 1 rock salmon taken on hand lines
no weights taken.

Table of Sets (Halibut)

number used
Av. of in. Qu. all other
cases all fish were
weighed.

Set	Ref. Sta.	Date	Depth	Bottom	No. Skates	Duration	Bait	No. fish.	Total Weight	Range	Average	No. first class	Average first class	Dog fish	Sharks	Skates	Ratfish	Rock-Salmon	Red-rock cod	Black Cod	Codling	Hake	Sole	Remarks.
XIV 14	Off Newport (approximately as indicated on chart)	July 20	25	crs. gy. S. 9 pennatulids	1 (do)	5	salt herring	6	720	6-45	20.0	27	24.0			12								1 halibut
XV 15	do	July 20	38	crs. gy. S. 1 pennatulid 1 anemones 4 starfish (Heliaster)	28 (do)	3	surf perch salt herring	5 (30) 25						7	3			37 35						* flounder gear 1 live (6 in) scallop on hand line 4 red-rock fish and 3 soles taken on hand lines 1 dogfish 2 in. long.
XVI 16	do	July 21	45	crs. gy. S. 1 pennatulid 5 starfish (Heliaster) 1 anemones	38 (do)	2	surf perch salt herring	45	1867	10-125	41.5	38	40.4	4	32			4		4		5		* flounder gear 2 other tows, 15 and 30 mins respectively, unsuccessful.
XVII 17	do	July 24	38-44	crs. gy. S. 6 pennatulids 2 Heliaster	2 (do)	3	salmon	29	687	5-65	23.7	15	36.9		8				2 11		2		3	(bin) 1 live scallop taken with oyster dredge, 15 min. tow 2 halibut and 2 red-rock fish taken on hand lines.
XVIII 18	do	July 25	47	crs. gy. S. 2 Heliaster	2 (do)	2	frozen herring	5	265	10-11.5	48.0	3	38.3	5 8	2 3									5 dogfish, 2 skates and 1 red-rock fish taken on hand lines. 1 skate 8 1/2 in wide. 1 octopus arms, 54 in. long.
XIX 19	do	July 27	35-40 4 rocks	Shale, rky, crs. S.; fine G.; foraminifera. 1 Heliaster	2 (do)	2	octopus salt herring	36 35	817	4-70	22.7	24	31.2	13	1									1 halibut taken on hand lines
XX 20	do	July 28	33-35	crs. gy. S. 4 Heliaster	1 (do)	2	salmon salt herring	18	397	6-60	22.0	13	27.1	4	2							2	1	
XXI 21	do	Aug 4	30	crs. gy. S. 30 pennatulids 2 Heliaster	1 (do)	1	surf perch salmon salt herring	5	132	7-55	26.4	3	38.3		11								2	
XXII 22	do	Aug 6	35	crs. gy. S. 6 Heliaster 1 anemones	2 (do)	4	surf perch salt herring	18	327	7-40	18.2	12	22.4		8	1								2 live (3 and 7 in.) scallops taken with oyster dredge, 20 min tow 2 other tows 40 and 45 mins. ea. both unsuccessful.
XXIII 23	do	Aug 14	40	crs. gy. S. 3 pennatulids	1 (do)	2	frozen herring	38	813	5-75	21.4	23	30.4	1	15			2					1	40 min. tow with oyster dredge, unsuccessful.
XXIV 24	do	Aug 15	35	Shale rky; crs. gy. S. 2 radiis, honeycombed full of life. 1 Heliaster	1 (do)	3	salmon	27	559	6-55	20.7	15	29.0				2		15				3	
XXV 25	do	Aug 16	37	fine gy. S. 1 Heliaster	1 (do)	2	salmon	89	355	15-70	39.4	9	39.4	28	1	1							2	1 halibut
XXVI 26	do	Aug 17	35	Shale, rky. 2 anemones.	1 (do)	2	salmon	29 28	934	6-75	32.2	22	40.1	1 3	1 4				1					1 dogfish, 1 blue shark, and 1 red-rock fish taken on hand lines 1 skate, 54 in. wide.

Set	Ref. Sta.	Date	Depth	Bottom	No Skates	Duration	Bait	No fish	Total Weight	Range	Average No first class	Average first class	Dog fish	Sharks	Skates	Flat fish	Rock salmon	Red rock cod	Black cod	Ling Cod (Ling) Cod	Hake	Sole	Remarks
Third Albatross Trip.																							
XXVII 27 Off Coos Bay (Umpqua River Light bears N. 28½° E. (true) distant 8.2 miles)	5624	Aug 29	36	fne. gy. S. 1 star fish. (do)	2	2	salmon	2	32	12-20	16	2	16		3	1						3	Double-banked set Sole: 18, 19 and 22 in. long.
XXVIII 28 do (Cape Arago Light bears N. 72° (true) distant 9.0 miles)	5632	Aug 30	65	shale, gran.	2	2	salmon	13	375	11-85	28.8	12	24.2	4	2					2		3	Double-banked set 1 shark was "soup fin" Blue shark: 56 in. long.
XXIX 29 do (Cape Arago Light bears S. 20½° E. (true) distant 2.7 miles)	5633	Aug 30	30	fne. gy. S.	2	2	salmon	3	109	9-90	36.3	0	0	2	15							3	Double-banked set
XXX 30 do (Cape Arago Light bears S. 2½° E. (true) distant 5.5 miles)	5650	Aug 31	47	fne. gy. S.	2	2	salmon							1	7							1	Double-banked set 1 shark was "soup fin"
XXXI 31 Off Heceta Head (Heceta Light bears N. 28½° E. (true) distant 10.8 miles)	5663	Aug 31	42	fne. gy. S.	2	2	salmon							6				3			2	2	Double-banked set
XXXII 32 Heceta Bank. (Heceta Light bears N. 79° E. (true) distant 31.4 miles)	5681	Sept 1	82	shale, gran, fne. blk. S.	2	2	salmon	7	259	10-80	37.0	6	41.5	12	30	18	1	150?	2	3		3	Double-banked set
XXXIII 33 do (Heceta Light bears S. 76° E. (true) distant 32.1 miles)	5689	Sept. 1	87	Atty shale, hrd. M.; fne. blk. S. 1 basket (cup) sponge (do)	2	2	salmon	3	165	40-80	55.0	3	55.0	7	2	6	2	31	5				Double-banked set Black cod averaged 16 lbs., 33-36 in. long.
XXXIV 34 Off Newport (Yaquina Light bears N. 63° E. (true) distant 20.7 miles)	5706	Sept. 2	63	crs. gy. S.; fne G.; blk. Sh.	2	2	salmon	9	289	16-64	32.1	9	32.1	7	6			13				5	Double-banked set 1 silver salmon taken on gear
XXXV 35 Off Cascade Head (Cape Kiwanda bears N. 25½° E. (true) distant 13.8 miles)	5731	Sept. 3	45	fne. gy. S.	2	2	salmon	1	57	57				10	4					3		2	Double-banked set
XXXVI 36 Off Tillamook. (Cape Meares Light bears S. 25° E. (true) distant 9.4 miles)	5743	Sept. 4	43	fne. gy. S.	2	2	salmon	2	25	9-16	12.5	1	16	6	2	3			4		1		Double-banked set 1 arrow-toothed halibut taken on gear
XXXVII 37 do (Tillamook Light bears N. 43½° E. (true) distant 8.2 miles)	5751	Sept. 4	56	fne. gy. S.	2	2	salmon							2	4				1			1	Double-banked set
XXXVIII 38 Off Gray's Harbor. (Cape Shoalwater Light bears S. 49° E. (true) distant 20.9 miles)	5771	Sept. 5	38	fne. G.; crs. G. 3 anemones (do)	4	2	salmon							1	1		1						1 silver salmon taken on gear.

Table II

100

Table of Trials for Scallops

Table of Trials for Scallops													Flounder taken during trial.							
No. of Trial	Position	Ref. Sta.	Date	Time of Day	Depth fms	Bottom	Apparatus	Haul		Scallops Taken			Citharichthys sordidus	Eopsetta jordani	Glyptocephalus zachirus	Lyopsetta exilis	Parophrys vetulus	Psettichthys melanostictus	Addenda	
								Length	Direction	Duration	Large 4 1/2 - 6"	Small 2 1/2 - 4"								Dead Valves
Off Newport																				
I	approximately as located on chart	XV	Set No. XV (3b)	July 20	9:55 a.m.	38	crs. gy. S.	Oyster Dredge			20 mins								1 large jelly fish	
II	do	"	do do	do	10:35 "	do	do	do			30 "	1							1 (6 in) living scallop brought up on hand line during this haul. several worm tubes.	
III	do	XVII	Set No. XVII (5)	July 24	11:00 "	38-44	do	do			15 "	1							= 6 inch.	
IV	do		do do	do	11:30 "	do	do	do			15 "									
V	do		do do	do	12:00 N.	do	do	do			30 "									
VI	do	XXII	Set No. XXII (10)	Aug. 6	10:45 a.m.	35	do	do			45 "									
VII	do		do do	do	12:30 p.m.	do	do	do			1 hr.								large scallop = 7 inch small " = 3 "	
VIII	do		do do	do	1:40 do	do	do	do			15 mins	1	1						1 starfish and worm tubes.	
IX	Yaquina Light bears N 62° E. (true), distant 6.4 miles	H. 5714	Sept. 2	1:45 p.m.	57 33	do	do	1 mi.	S 12° E.	17 1/2 mins			10	2			3	12	Hermit crabs, Algae, Worm tubes, Starfishes	
X	do do do N. 77 1/2° E. do, do 8.0 "	H. 5715	do	3:00 "	42	crs. gy. S. fine G.	9 ft. Ag.	do	S	19 "			60	1			2	2	Worm tubes, Algae, Molluscs, 1 Brillestar	
XI	do do do S 84° E. do, do 5.1 "	H. 5716	do	4:07 "	34	crs. gy. S.	do	do	S 13° W	17 "			90	2			20	43	1 Tomcod, 1 smelt, 7 young black cod, 13 starfish, barandes, nudibranch, dead shells, 1 crab + 1 hermit.	
XII	do do do S 80° E. do do 2.8 "	H. 5717	do	5:05 "	28	do	Oyster Dredge	0.7 miles	S	15 "							2		3 starfish	
XIII	do do do N. 75° E do do 4.0 "	H. 5718	do	5:53 "	33	do	do	1 mile	S 67° E.	15 1/2 "			27	1			18	22	1 leach, 1 polynices egg case, 1 shark egg case, 1 polynices egg case, 12 hermit crabs, 5 starfish, several pennatulids, 1 dead Schizothaerus valve.	
Off Cascade Head																				
XIV	Cape Kiwanda bears N. 31° E (true) distant 12.2 miles	H. 5732	Sept. 3	11:45 a.m.	51 50	fine gy. S.	do	do	S 62° E	20 1/2 mins	30	20	28	24					28 starfish, anemones, crustaceans, worm tubes, molluscs, worms, 15 starfish, 1 dead Schizothaerus valve.	
XV	do do do N. 22° E. do, do 10.5 do	H. 5733	do	12:50 p.m.	32	do	do	do	S 24° E	15 mins		3		3	1	8	1	2	4	2 C. magister (crabs)
XVI	do do do N. 20 1/2° E. do, do 13.5 do	H. 5734	do	2:28 "	30	crs. gy. S. fine G.	do	do	do	20 mins			1		3		2	10		1 Rajabiodonta, 1 starfish, 1 anemone, 1 young black-cod
XVII	do do do N. 34° E. do, do 10.1 do	H. 5735	do	3:40 "	42	crs. gy. S.	do	do	do	20 mins	2	13								11 starfish, 1 nudibranch.

35 | 39 | 19 | 30 | 12 | 1 | 47 | 95

Table III